# The Builder.

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Shops, Teddington Bridge.—Mr. H. Huntly-Gordon, A.R.I.B.A., Architect ..... *Single-Page Ink-Photo.*
No. 3, Berkeley-square, W.—Mr. H. Huntly-Gordon, A.R.I.B.A., Architect ..... *Single-Page Ink-Photo.*
No. 82, Mortimer-street, London.—Mr. Beresford Pite, A.R.I.B.A., Architect ..... *Single-Page Tone-Block.*
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### *Old London Churches.*

THE appearance of a sumptuous illustrative book on the churches of London built in the two last centuries* comes opportunely. The widespread feeling as to the architectural beauty and interest of these churches, which accompanied the revived interest of late years in the works of Wren and some of his immediate successors, has somewhat slackened, and only a few days ago we find the rector of St. Mary's Lothbury, in writing to the *Times* to repudiate indignantly the insinuation that his church had no congregation and was practically useless, and might therefore as well make way for the requirements of a railway company, at the same time making the cool assumption that "about one-third of the city churches" might as well be removed, as being not only useless but of no architectural interest. Now, although the exterior of St. Mary's Lothbury is not a beautiful piece of architecture, the interior is one of the most charming in London in general design and in fitness for congregational worship, and to destroy it would in our opinion be a piece of sheer barbarism; but that the clerical custodian of this church, while rightly defending its retention, should take the opportunity to recommend the destruction of a number of other old churches in which he is not so directly interested, is a proceeding in the very worst taste and evincing a good deal of stupidity. We should like to see the rector's list of the one-third of the churches (not his own) which he devotes to destruction.

Mr. Birch's monumental volume naturally commences with St. Paul's, to which however we need not devote special attention, as there is not much new to be said about it now, and fortunately no one at present proposes to pull it down; though if it were some day discovered that the site of St. Paul's offered peculiar advantages for a central station for City railways, we have no doubt that there are many engineers who would be quite ready to pull down the cathedral with a perfectly light heart, and make a merit of the action. Mr. Birch gives a series of fine plates of exterior and interior views of the building, from photographs, besides a number of smaller illustrations of details of carving and metal work. It is a pity that there was no attempt to make a drawing showing the whole composition and grouping of the dome and substructure from such a point of view as would have presented it to the greatest advantage; the photographs from possible positions on the ground level of course nearly lose the dome, and the frontispiece, from a photograph taken from the roofs of the houses, does not represent the natural and best position for judging of an architectural design. And we should have expected from Mr. Birch a little more æsthetic discernment than is shown in his enthusiastic language about what he calls "the lofty and superb reredos" added to the cathedral, and which he seems to think such an addition to the building. How any architect can approve of such a solecism as practically shortening an apsidal church by placing in front of the apse an apsidal reredos—a curve in front of a curve, leaving a totally useless and abnormal space in the rear, it is impossible for us to understand, or how any architect came to do such a thing; one would have thought the very appearance of the combination of lines on the plan would have been enough to show its architectural fallacy; and when Mr. Birch names the firm of carvers who, as he says, "executed" it, he seems quite to overlook the fact that, in the case of sculpture in such a central position in a church of the first importance, we had a right to expect that a sculptor of the first order should have been employed. If the author had heard the comments on it that we have heard from the lips of eminent painters and sculptors, his eyes would be a little opened.

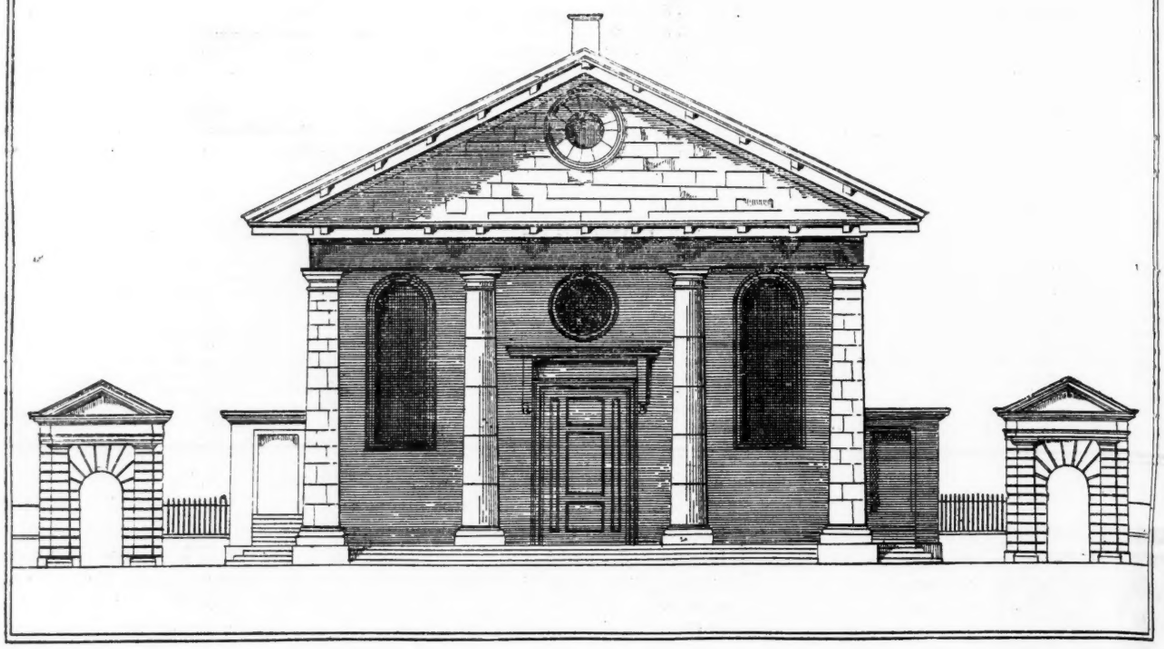
The churches illustrated and described in the volume are by Inigo Jones, Wren, Hawksmoor, and Gibbs, with some passing references to the works of some of their followers, such as Flitcroft's St. Giles-in-the-Fields, the steeple of which the author rightly recognises as a work of considerable merit and interest, though he is no doubt equally right in considering the church generally as but a poor affair. The two churches assumed to be by Jones, St. Catherine Cree and St. Alban Wood-street, form a curious pair, as they both retain the Gothic three-aisled plan, only that St. Alban is in late Gothic style, and St. Catherine is mainly Classic, with a curious mixture of late Gothic detail in the windows, as well as in the sham vaulting. Yet the churches were built almost at the same time, St. Alban a year or two later than the other, in 1633, while St. Catherine is attributed to 1630. Mr. Birch touches on the assertion that St. Alban was destroyed in the fire of London, and the question whether Wren rebuilt it on Jones's design; but inclines to the opinion that the walls remained and that Wren only re-roofed it. He says, and we are disposed to agree with him, that the late Gothic detail in it seems too good for Wren, who was not so close to the Mediæval period as Jones, and never contrived to really assimilate Gothic detail even on the rare occasions when he attempted it. The odd point is, what induced Inigo Jones, who was already a decided Classic in taste, to build this particular church in the Gothic style of the late sixteenth century. It was no endeavour to replace what was there before, for the preceding church was of much earlier Mediæval date. The choice of style was perhaps owing to the wishes of his clients.

The illustration of the east end of St. Paul's Covent Garden is of some interest, inasmuch as it is given with the side gateways to the churchyard, now removed, but which much improve its appearance (see next page) affording a balance to the central mass. The portico, oddly erected at what would now be thought the wrong end of the building—ideas of orientation having apparently lapsed for the time, or not being present to the architect's mind*—may be taken to be Inigo Jones at two removes; the Earl of Burlington having first restored the portico to its original form as designed by Jones (at half the cost, he observed, which the parishioners had expended in spoiling it), and Thomas Hardwick, late in the last century, faced it with stone and rebuilt the gateways in that material. Mr. Birch, like other writers old and new, speaks of the design with a contempt which it hardly deserves. The portico always strikes us as a fine piece of bold, though simple work, and we should be exceedingly sorry to miss it.

One of the best lessons to get from a collection of illustrations such as are comprised in this book is as to the possible

* London Churches of the Seventeenth and Eighteenth Centuries. With illustrated historical accounts. By George H. Birch, F.S.A. London; B. T. Batsford; 1896.

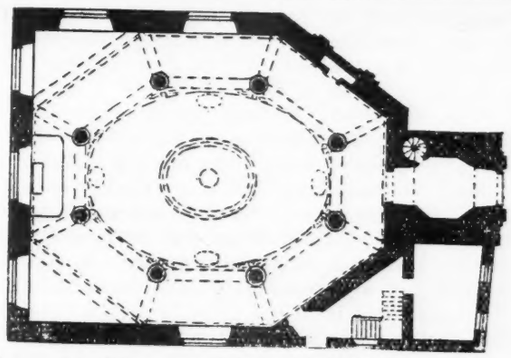
* The result perhaps of Inigo Jones's Italian studies.



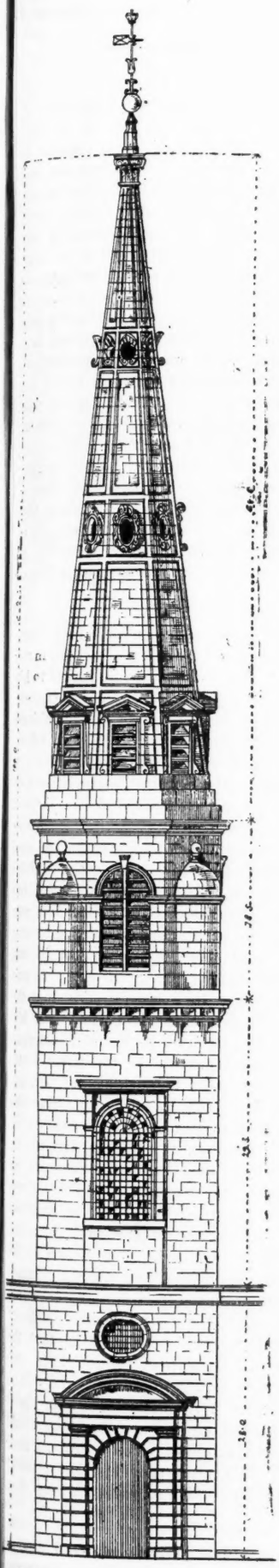
*St. Paul's, Covent Garden. East Front before the Removal of the Side Porticoes.*

varieties of planning which may be developed in buildings all erected for the same object. We are so accustomed to see the repetition of the same general plan, since the mediæval revival—three aisles and a chancel, with only the variation between the broad mediæval side-aisles and the narrow aisles for passage only (the one invention in modern church architecture), that it is good to be reminded what variety of arrangement and of architectural effect is possible without in any way sacrificing the suitability of the building as a place of worship.* St. Mary-le-Bow gives us a nearly square area with two piers close to the walls on two of the opposite sides, and an entry in the corner of the plan; this latter arrangement arising naturally out of the peculiarities of the site. The far-famed plan of St. Stephen, Walbrook, need only be referred to. St. Mary-at-Hill shows us the area, also nearly square, divided into nine nearly equal compartments by the four columns in the centre, with a small dome over the central space. St. Olave Jewry, now no more, showed the eccentric arrangement of an un-columned plan in a kind of coffin form, the walls narrowing towards the east end; not certainly to be admired or recommended for imitation. St. Benet Fink was an elongated decagon, with six central columns carrying a long elliptical dome—an arrangement susceptible of admirable internal effect. St. George, Botolph-lane, was a square with four columns in a square in the centre, one of them "engaged" in the wall of the porch under the tower, which was thus taken off the corner of the church without appearing to be an encroachment on the internal area; it fits neatly into one of the angle squares formed by the columns on the plan. St. James Garlick Hythe is an oblong parallelogram with Ionic columns forming narrow side aisles, nearly anticipating the modern form of Gothic plan so often used; the middle intercolumnation on each side is wider than the others, and the cornice returned at this point into the recess, and stopping against the outer wall of the building. St. Lawrence Jewry has a long parallelogram with coffered ceiling for its main compartment, with one side aisle, shorter than the nave, defined by a colonnade. St. Bride, Fleet-street, is nearly the mediæval three-aisled plan, only with a shallow chancel in place of the long mediæval one, the fine and remarkable west-end tower standing on plan nearly within the nave, the gallery stairs arranged in the spaces left on each side of the tower. In this church one always remarks with pleasure the elegant manner in which the gallery is connected with and made to seem an integral portion of the architectural design, by the short pilasters attached to the columns and carrying the gallery. In Gibbs's St. Clement Danes we have a rather wide plan with colonnades forming narrow side aisles, the outer walls sweeping round in a large semicircle at the east end, and an apse, forming rather more than a half circle, developing out of it. In St. Antholin we had a plan with canted sides at the west end and a square at the east end, the eight columns forming however a complete but slightly lengthened octagon which was carried all round in the ceiling lines. The effect of this ceiling plan in conjunction with the square lines on the eastern portion of the ground floor must have been peculiar but may have been very effective; the plan on the ground level expanded from the entrance, and the effect of this arrangement could hardly fail to be striking. St. Augustine and St. Faith is a square area to which is added one north aisle divided off by two columns and a small western compartment adjoining the tower, with a single column between it and the nave. St. Mildred, Bread-street, is a parallelogram with a sufficient space cut off by a large arch at each end to leave in the centre a square compartment with a domical roof. St. Martin Ludgate is a slightly irregular square divided into nine compartments by four central columns, but with the additional remarkable feature of a large narthex separated from the church by three great arches carried on the large square piers under the inner angles of the tower; probably comparatively few persons enter this church, all who do must be surprised at the fine and unexpected effect of this feature on looking back after advancing into the body of the church. St. Mary Abchurch shews a simple square with a dome carried on a series of pendentives and with a strongly marked modilion cornice round its base. Christchurch, Spitalfields, (Hawksmoor), is a more remarkable-looking church than many persons are aware of, both from the great space devoted on the plan to the steps, porch, and vestibule under the tower, and the very bold and original treatment of this portion of the church externally. The porch is carried on four great columns on huge panelled pedestals, much too large for them one would be disposed to say, yet they add to the bold appearance of the whole; the centre inter-columniation is wider than the side ones, and carries a semicircular roof, the corner breaking into the porch as a base to it; above this rises the steeple, treated in great masses of nearly plain stonework spreading out laterally on each side into buttresses, with the square lantern connected with the buttresses by curved trusses, and the broach spire over all, forming a whole which, in spite of its detail, is really a great deal more Gothic than Classic in feeling, and which never fails to impress every spectator seeing it for the first time.

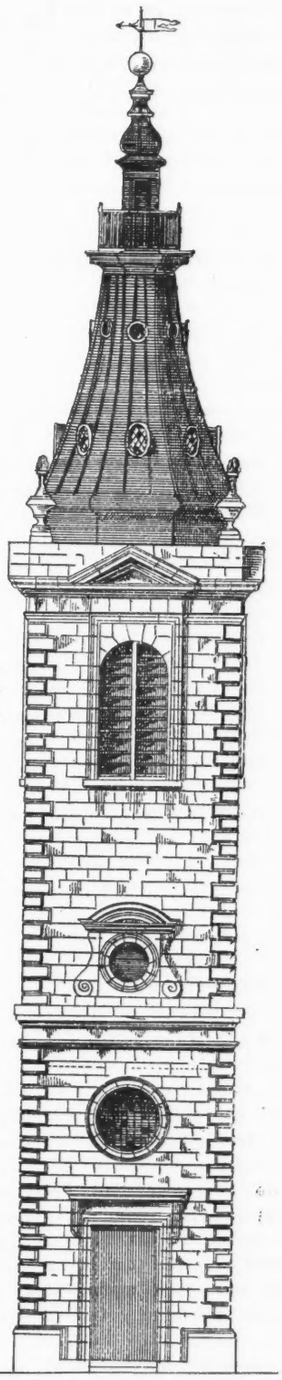
* By an unfortunate and (on the part of an architect) rather extraordinary omission, scarcely any of the plans have scales attached to them. This sin of omission seems to have been recognised when too late, as a slip sent by the publisher for insertion in the book informs the reader that St. Paul's plan is shown to a scale of 50 ft. to an inch, and the other plans to a uniform scale of 32 ft. to an inch.



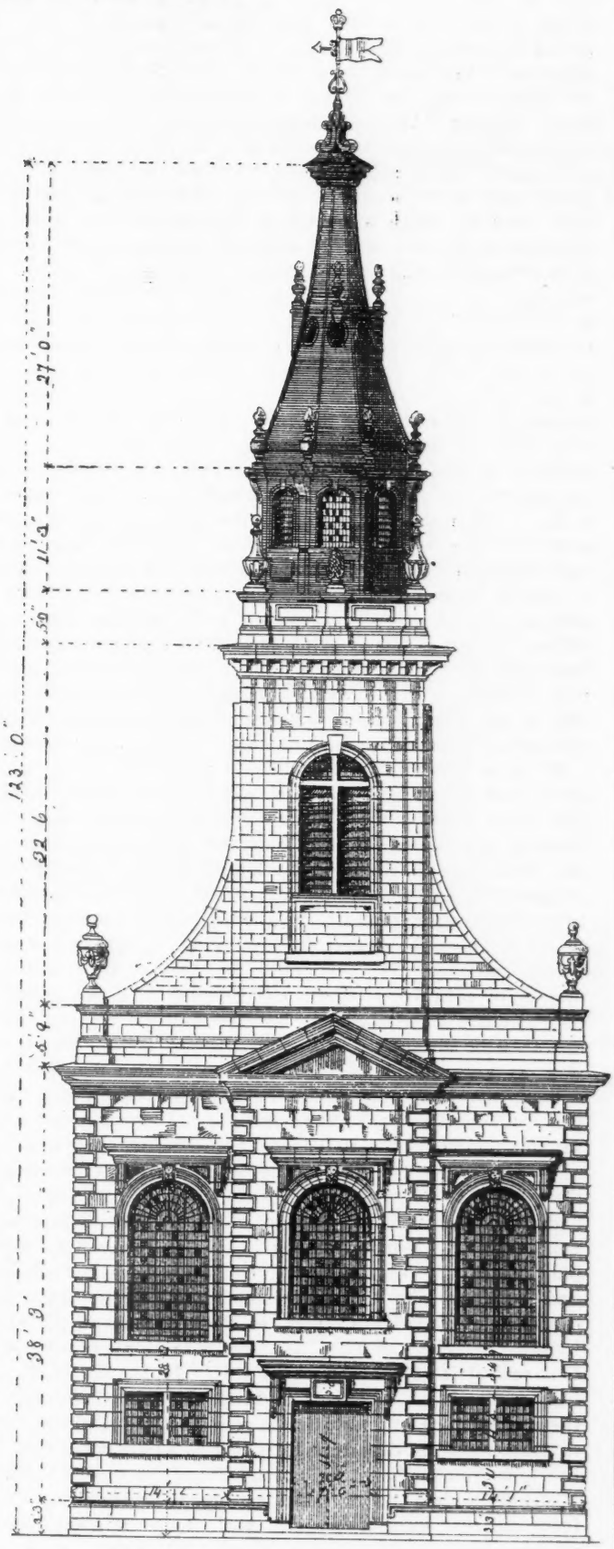
*Plan of St. Antholin, Budge Row.*



*Tower, St. Antholin, Budge Row (now demolished).*



*Tower, St. Nicholas Cole Abbey.*



*South Front, St. Edmund the King, Lombard-street.*

Mr. Birch refers to it as eccentric, but it is a great deal too powerful and picturesque to merit the kind of criticism implied in the word; it is the work of an architect who thought for himself and was not afraid of departing from rule and precedent in the process. Lastly, we may name Hawksmoor's other notable church St. Mary Woolnoth, equally original but not equally effective externally, but of which the plan, a square with a group of three columns near each angle, giving the interior the effect of a Greek cross, and carrying a domical roof, is one of the happiest and most effective among the old London church interiors. In this case the removal of the galleries, the old fronts of which have been preserved and affixed to the walls, was a real architectural advantage to the church, as the columns were not designed with any special reference to them. In most of Wren's galleried churches the removal of the galleries would be a disadvantage to them architecturally, a fact so much more to the credit of Wren, who knew how to design a gallery so that it appeared to be an essential portion of the architecture instead of an excrescence. This was also the case in his treatment of the woodwork of the pews, which is the reason we can never cease to deplore the modernisation of the interior of St. Stephen Walbrook, by the introduction of low seats, and the consequent destruction of the true proportions of the internal architecture, which was designed by Wren to begin, as it were, from the upper line of the woodwork as a kind of podium. In an ordinary church there might have been reason in altering the seats to suit modern fashions (it is more a question of fashion than anything else), but in the case of a church of such exceptional architectural interest as this it surely might have been worth while to give up a little in the way of fashion for the sake of preserving one of the finest designs by one of the greatest architects of the modern era.

We have thought it worth while to note down here in succession the varieties of plan to be found in these churches (mostly Wren's); we give one of them only, that of the demolished St. Antholin, but the points of the others, and the possibilities of design which they suggest, can easily be appreciated by all architectural readers in description; indeed, perhaps the description of the system of plan is better for our purpose than so many drawn out plans, because they can then be considered in a more abstract way as suggestions in church planning, without the temptation to mere copying which the plan on paper has a tendency to set up. Our object is to suggest to architects what a great variety of treatment is really open to them in planning churches, and how little is usually made of these opportunities. Where among churches built since the Gothic revival could we find anything like the same number of examples of variation in plan as the old London churches afford? The ecclesiastical revival is at the bottom of this. It has taught church architects to think that there is but one orthodox church plan, and that any important departure from that is a liberty which churchmen will not approve of. We want to get rid of this idea, and to recognise that even if we still wish, for reasons of association, to keep to the revived Gothic style in church architecture, there is no reason why we should be bound to one type of plan, and that in fact as many varieties of treatment are open to us as were open to Wren, if we choose to avail ourselves of them.

In some respects, of course, the Wren churches may be and have been overrated. There is no doubt a sad amount of sham construction in a good many of the interiors —plaster vaults and arches, and so on; and a good deal of decorative detail which is in a very licentious taste. It may be rather a question whether Wren had really much to do with this; he designed each building as a whole, but the carved and modelled details were probably the result to a great extent of the artificer's own genius. Such points as the very careful and effective arrangement of the panelling in the dome of St. Stephen, Walbrook, to which the author draws special attention, and of which he gives a large illustration as seen looking up from below, probably betray Wren's hand, but we can hardly suppose him to have made designs for the carving, &c., in his churches, and neither the faults nor the merits of this portion of the work are to be charged to him. He was no doubt careful to engage good artists in wood and plaster work and stone carving, but the work was rather that of the fashion of the day than his own design; though no doubt he approved of it, and was not conscious of some faults of taste which are quite obvious to us. Still, a great deal of the woodwork in his London churches is, as we all know, exceedingly fine; and at all events has a force and vigour which go far to atone for any faults of style. Nothing is more remarkable in the churches of this period than the fine and sumptuous character of many of the organ cases; a source of effect which under the Gothic revival was often strangely overlooked. The perception of what may be done with an organ case has a little revived of late years in this country; but it would be rather difficult even now to find any recent organ case which at all comes up to some of the finest of those to be found in Wren's churches. For the general design of these he was probably responsible, they were so much a part of the architectural design of the interior. Another quality to be observed in his plans is their spacious character, especially in regard to the amount of space devoted to entrances and approaches, a quality which adds immensely to the dignity of a church of average dimensions. In his larger and more important towers Wren shows also real genius, and as much variety as in the plans; the smaller ones are no doubt unequal, and some of them not very beautiful, but even in these there is a great deal of variety and ingenuity of treatment. We give, from among the cuts in the book, a representation of the unfortunate tower of St. Antholin, which never ought to have been destroyed, and which is an exceedingly interesting example of the treatment of the spire form with Classic detail. The terminations to the towers of St. Nicholas Cole Abbey and St. Edmund the King are also examples of variety and picturesque treatment of the finials or spirelets, the latter of which again, in spite of Classic detail, is distinctly Gothic in feeling.

A good many interesting specimens of church plate exist among the London churches, and some of them are illustrated by Mr. Birch, among the numerous woodcuts with which the text is strewn, in addition to the separate plates.

Admirers of this remarkable series of churches have to thank author and publisher for a finely got up book which is not unworthy of its subject.

## NOTES.

The Russian Catastrophe.

THE frightful catastrophe at Moscow is one of a kind which it is hardly possible to imagine as occurring on our own soil and amid our better-educated and cooler-headed population, but it nevertheless reads a lesson as to the great danger of making any arrangement for the treatment of a large crowd, whereby they are encouraged to press toward one point, and their advance to it is facilitated, without any sufficient means of egress or provision for controlling their movements. The children's accident at Sunderland arose from a similar cause, and in this country it is perhaps rather with assemblies of children than of grown persons that we have to fear anything of this kind. Still, it is well to bear in mind the importance of providing, on all occasions when a great crowd may be expected to collect, that they shall not be allowed any chance of operating in a wedge form. Facility of access should be proportioned to facility of egress.

Newspaper Criticism of Architects.

THE attacks which have been made on Mr. T. G. Jackson in the *Daily Chronicle*, in regard to his treatment of the tower of St. Mary's Oxford, are highly characteristic of the combined impertinence and ignorance with which criticism of this kind is carried on in the daily press. The Special Correspondent of the paper in question assailed Mr. Jackson in an article showing entire ignorance of the facts, which drew forth a cool and sarcastic reply from the architect, a letter which was evidently felt to be inconvenient, as its publication was postponed for several days while editor and correspondent were no doubt considering how they could wriggle out of it. This was eventually done by a reply stating that the special correspondent had read all Mr. Jackson's Report (after he saw Mr. Jackson's letter, no doubt), repeating the same statements in the most unblushing manner, and accusing Mr. Jackson of being influenced by a desire to put his own work in St. Mary's. There are restoring architects, unfortunately, who are open to such an insinuation; if the editor of the *Daily Chronicle* knew anything of the architect he was libelling, and of the spirit in which he works, he would perhaps awake to the fact that he had discredited his own columns by admitting such remarks. The crowning achievement of the "special correspondent" is found in the impudent assertion that the remains of the statues, which were discovered to be rotting to pieces *in situ*, will no doubt perish now that they have been removed under cover, but that "they would have lasted many centuries if left in their niches." This after they had been found to be actually coming to pieces where they stood!

Points in Building Society Law.

THE recently reported case of Dennison *v.* Jeffs contains some points of interest and importance to building societies. It was an action

in the Chancery Division claiming an injunction to prevent the defendants from dealing with the assets of a building society of which they were trustees for the purpose of winding up, on the ground that the instrument of dissolution was void. It is impossible to do more here than state the judge's decision on the point relied upon by the plaintiff, who was a married woman. This person did not sign the deed herself; her name was signed in her presence, with her consent, by her husband. The judge held that this was a sufficient signature. Next, some of the signatories were persons under twenty-one years of age, who were eligible for membership but, by the rules, could not hold office or vote. It was argued that signing an instrument of dissolution was an act in the nature of voting. This view, however, did not commend itself to the judge, who held that a minor could validly sign this document. So far the plaintiff had failed, but in the last point she was successful. The instrument was properly prepared in duplicate, and was duly signed and registered. One of these duplicates was returned to the trustees, and had some additional signatures placed on it. These signatures were now necessary in order to make up the requisite legal number, in consequence of some of those who first signed the deed having ceased to be members of the society. The judge held that signatures added after registration were invalid, for the document was not really executed in duplicate, some signatures appearing only on one portion of the instrument. What was required was a new instrument of dissolution, duly signed in both parts and duly registered after being fully signed. Such are the pitfalls of the law of building societies.

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The French Chamber of Deputies.

IT seems to be now definitely settled that the talked-of rebuilding of the French Legislative Council Chamber is to be abandoned or indefinitely postponed; at least that appears to be the conclusion from the negative vote of the Parliamentary Committee on the budget, which expressed the opinion that the financial situation did not justify the expenditure of four million francs on a scheme which was considered of doubtful utility.

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The Light Railways Question.

PARLIAMENTARY procedure affords plenty of scope for persistence, and another attempt has been made during the report stage of the Light Railways Bill to introduce an amendmend enabling Parish Councils to take part in promoting Light Railways. Of course the proposal was negatived by a large majority, as were other propositions which had been similarly considered and rejected at earlier stages of the Bill. In the course of Monday's debate it was announced that the Earl of Jersey would be Chairman of the new Commission to be created under the Bill. This appointment has given general satisfaction, and there is no doubt that if he has competent assistance the Commission will be a strong and practical one. The Earl of Jersey associated himself with the movement for the abolition of preferential railway rates, frequently speaking both in and out of Parliament upon this and other subjects affecting the agricultural interest. The suggestion that Lord Cobham should perform the duties of paid Commissioner was wisely rejected. He may have had a pretty varied experience of railway economics, and still be comparatively uninformed upon matters with which it is essential that the Light Railways Commissioner should be thoroughly conversant. Mr. Ritchie indicated that a capable engineer and a lawyer would probably complete the Commission.

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Dangers of High Speed Tramways.

THERE was a remarkable letter in Wednesday's *Times* from a writer who signs himself "Union Jack," and writes from Kingston, New York State, U.S.A. He wishes to warn Englishmen against the dangers of overhead electric traction, and points out that in Brooklyn alone 148 lives have already been lost through accidents with the electric cars. He, therefore, hopes that every effort will be made to keep these "death-dealing" vehicles out of London. The number of fatal accidents in Brooklyn is certainly appalling, but electricity has little to do with them. They are due as a rule to the high speed at which the cars run, and when the lines are slippery the brakes will not hold. It will be remembered that last year the New York City Authorities took decisive action, and tried the President of the largest trolley company for manslaughter. Notwithstanding the accidents, an ordinance limiting the speed of the cars to eight miles an hour is very unpopular. Americans try and mend matters by perfecting "man-catchers"—street-car fenders they call them. A fresh variety of fender is to be seen in almost every town. "Union Jack" is wrong in stating that there is no underground electric traction system in New York. The Lenox-avenue line is a great success. To the uninitiated it looks like a cable system, but it really is the same as the electric conduit system employed in Buda-Pest.

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Sanitary State of Helmsley.

Dr. R. BRUCE LOW'S Report to the Local Government Board on an outbreak of enteric fever at Helmsley, in the North Riding of Yorkshire, traces the causes of the outbreak mainly to the polluted state of the streams running through or near the town, the Boro' Beck and the Rye. The workhouse and other places discharge all their drainage into the Beck, and when the water in the stream is low, excrement accumulates in unsightly heaps at points along the bank. When a flood comes all this filth is swept into the Rye. Much of the house drainage in Helmsley is defective; faulty gradients, bad joints, and unskilled workmanship have combined in certain instances to cause frequent stoppages. Some houses have no connexion at all with the sewers. A considerable number of houses have uncovered privy middens, which are sometimes merely holes dug at the back of the privy, without any brickwork to enclose them, and without paving at the bottom. A few years ago a large number of unwholesome middens were dealt with by the agent of the Duncome Park Estate, and replaced by others of a more modern type, but this much-needed improvement was not completed, and some of the old middens remaining are a constant source of danger to health. "This question of privy accommodation and refuse disposal," says the Report, "is one that demands the serious attention of the Rural District Council."

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Electric Wiring.

THE General Electric Company, of Queen Victoria-street, London, have sent us in pamphlet form a reprint of the paper on "Electric Wiring," read by Mr. F. Bathurst before the Institution of Electrical Engineers in November last. It also contains Mr. Bathurst's reply to the discussion, and three instructive appendices. As many of our readers have been puzzled at times with the extraordinary discrepancies between the estimates of wiring contractors, we would recommend this pamphlet to their notice. We understand that the General Electric Company will send copies on application. Although we have always looked kindly on "interior conduit wiring," we think enthusiasm for his subject has rather carried Mr. Bathurst too far in his reply. However, our readers will be able to discount the exuberances of his fancy, produced possibly by his lengthened stay in America, and as there are many very sensible and practical remarks in non-technical language, the pamphlet will be profitable reading.

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Szerelmey Stone Liquid.

WE have received a pamphlet* on the cause and cure of damp and decay in masonry, which reminds us of the celebrated experiments carried out many years ago with a view to arrest the decay of stone in the then "new Houses of Parliament." None of the experiments created more interest at the time than those of Colonel Szerelmey, and although the pamphlet before us professes to give a general account of the cure of the decay of masonry, it is but natural that the writers thereof should be unable to find any other substance than their own specific to accomplish the desired result. It is charitable to pass over the chapter dealing with the cause of decay in stone; and it may be well not to inquire too closely into the effects from a stone preservative point of view of much of the composition as used some thirty or forty years ago; it is sufficient to note that the experience gained by the firm led them to introduce a new or improved substance some twenty years since, which certainly seems to have been attended with considerable success. This newer "stone liquid" is laid on the outside of the wall with a common brush, it sinks readily into the masonry, and renders it practically waterproof. Although the wall or surface treated appears, at first, as though it were slightly damp, the masonry is not permanently discoloured; it resumes its normal appearance on the lapse of a few weeks. This liquid does not enter into chemical composition with the material to which it is applied, it fills the pores of the stone to within a short distance of the surface, making a species of impervious layer. It is one of the best preservative fluids in the market, and is applicable not only to stone, but to brick, cement, concrete, and other materials of construction.

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An Old House, Blackfriars.

THE "Green Dragon," one of the oldest taverns in the City, has just been demolished. Marked by a high-pitched gable roof, and a parlour floor some depth below the ground level, it stood on the west side of St. Andrew's,

* London: N. C. Szerelmey & Co., 1896.

*olim* Puddle Dock, Hill, and formed the east side of Green Dragon-court, Blackfriars. The court lies between Cloister-court and Curriers'-row. Within a few yards distance northwards is the site of the house bought by Shakespeare, in 1613, of Henry Walker, "citizen and minstrel." The deed of conveyance describes the house as abutting upon a street (St. Andrew's-hill) leading down to Puddle Wharf, and as being now or late in the tenure or occupation of one William Ireland. Thus Ireland's name has been preserved, despite the Great Fire, in Ireland-yard, hard by; the house is that which Shakespeare left to his daughter, Susannah Hall, subject to the interests in a lease therein he had granted to one John Robinson. Cloister-court commemorates the monastery of the Dominican Friars, some remains whereof were found in the rebuilding of a portion of the *Times* offices in 1872. The churchyard of St. Ann's, built within the Blackfriars precincts and not rebuilt after the Fire, yet remains.

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The Honours at the Paris Salon.

THE voting for the Medals of Honour at the Old Salon took place last week. In painting the medal was awarded to M. Benjamin-Constant, who was run very closely by M. Harpignies and M. Henner. In sculpture the medal was awarded to M. Gustave Michel; in engraving to M. Henri Lefort, and in architecture to M. Scellier de Gisors, for his fine and remarkably complete set of drawings of the central depot of Post and Telegraph Office *matériel*, which was noticed at some length in our review of the architectural drawings at the Salon. The "Première Médaille" for the year, the reward for the most remarkable work exhibited, without distinction of class, was not awarded; a decision which confirms our previously expressed view that the Salon of this year was below the average.

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A "Panel" Picture Exhibition.

THIS is not, as the title seems to imply, a collection of works painted on wood, but a new idea of the Society of Fine Arts for arranging an exhibition of small pictures, representing the work of several different artists, the works of each artist being placed together and surrounded by a temporary gilt moulding affixed to the wall so as to frame them in a kind of large panel. It is an effective way of arranging such an exhibition, and shows the collective works of each artist to the best advantage. The artists whose work is illustrated in this case are Madame Henriette Ronner—various studies of kittens; Mr. Wimperis—a collection of admirable little landscapes in his true broad water-colour style, of which "Thunderstorm Clearing Off" (9), "Driving Home the Cattle" (14), and "Barley Field" (17) are especially good, and remarkable for the fine treatment of the sky; Mr. G. H. Boughton—pastels of various figure subjects; Mr. James Orrock—eleven landscapes; Mr. Archibald Thorburn—drawings of game birds, rather noticeable for realism than for artistic feeling; Mr. Charlton—hunting subjects; Mr. Robert Little; Mr. Wilmot Pilsbury, whose delicate though slightly hard style in landscape and farmyard scenes is illustrated at its best in some of these drawings; Mr. Edwin Hayes; and Mr. G. S. Elgood.

The "French Gallery," Pall Mall.

THE exhibitions at this gallery seem to be rather changing their character; instead of presenting, as of old, a considerable number of new cabinet pictures by important French and Flemish artists, the present exhibition includes a good many pictures by old English masters—Hoppner, Constable, Bonington, Morland, Romney, and others, but none of them, we fear, of the highest interest. A small scene in Venice, by Holland, is interesting as an example of a very powerful and now little remembered architectural painter. Callcott's "After the Storm" is a beach scene with (as usual) a bad sea, but a very fine, if somewhat artificial effect of light. The principal work is M. Bouguereau's large group, "The Fatherless and Widow," admirably painted and composed but totally destitute of feeling. There are two large landscapes by Heffner, one on the Thames and one at Ostia, in which the effect and the tone are precisely the same; in other words it is not nature, but Heffner. Among the real pictures may be named Cecil Lawson's "Valley of the Doone," powerful though somewhat over-wrought in effect; M. Fantin-Latour's beautiful little figure composition "An Idyll"; Wintour's "The Vale of Athol," a landscape in a fine broad style; a goat by Troyon, and Van Marcke's "A Brittany Farm," a perfectly admirable little work, perhaps the best in the room.

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Mr. Dana Gibson's Drawings.

READERS of *Harper's Magazine* will be familiar, if not with Mr. Gibson's name, with his work; he is the author of the numerous clever illustrations of "Society" figures, drawn in a bold free style in which surfaces and textures are defined by line work in a manner somewhat recalling, though not equalling, the work of Keene. The Fine Art Society have made a small collection of his original drawings, from which it appears that he adopts the very common American method of drawing the originals on a very large scale with coarse execution, trusting to the reduction to small size to give the requisite delicacy. This is hardly the most artistic method of procedure, and the drawings look far too large and coarse for their class of subject, though showing great ability. The best is perhaps "In a London Theatre," where the faces of two respectable and stolid occupants of the back row of the stalls are contrasted with the laughing and interested group of countenances of the pit audience immediately behind. There is considerable power of satire, as well as of drawing, in a good many of the examples.

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Russian and other Bronzes.

AT Messrs. Bellman, Ivey, & Carter's are a collection of bronzes, chiefly Russian, "émaux de bas taille," and "étains d'art." The Russian bronzes, although modelled in Russia, have been, we understand, cast in France. They are remarkable chiefly for minuteness of detail, and represent mostly figures of the peasant class and their horses. The modelling is in most cases excellent, and the effect of motion very striking in one or two instances. The general appearance would be much improved if greater simplicity had been observed in the treatment of the ground on which the groups stand. The ruts in the roads, and so on, are very faithfully given, but tend to detract from the effect of the figures themselves. There are three figure studies by Paul Richter—"Le "Travail," "Forgeron," and "Bûcheron"—excellent studies of anatomy and pose, the former no doubt largely to be accounted for from the fact that the modeller was at one time a medical man. A "St. George," by Frémiet, although not remarkable for any originality perhaps, is worth noting. The "émaux de bas taille" are not, we think, objects that will be much to English taste. They are chiefly vases of various sizes, of bronze, covered with glaze which is afterwards burnt in. The colour of the glazing, especially in one or two examples of blue, is very fine, but the general effect, somewhat enhanced by portions, such as the handles and bases, being gilt, is tawdry. The general outline, too, of these vases is not satisfactory. There are, on the other hand, some very excellent examples of work in pewter—mostly with figure subjects in low relief. A candlestick, a jug, and two plates are good in design and execution, and are by far the most interesting objects, we think, in the exhibition.

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Home Arts and Industries Association.

THE Association thus named will hold its twelfth annual exhibition at the Albert Hall on Thursday, June 11, and on the Friday Saturday and Monday following. The exhibits will include wood-carving, inlaying, repoussé metal work, pottery, hammered iron, besides other work of less directly artistic interest. This work is done by workers at their own homes, in various districts, under the direction of the Association and in connexion with the central management. The Association has an excellent influence in promoting and directing artistic handicrafts in many village homes, thus providing the workers with a new interest in life as well as an added source of income, and merits public support both on artistic and philanthropic grounds.

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## ARCHITECTURE AT THE ROYAL ACADEMY.—III.

WE have mentioned already two or three of the larger drawings in the Academy which illustrate domestic architecture. We may now turn to some of the other domestic or street architecture designs which are to be found on the walls.

Of Mr. Horsley's two exhibits in this class we prefer No. 1604, the front of the small building for the "Universities' Mission to Central Africa," a very simply treated front in which the only ornament is the panel of symbolical carving between the two first floor windows, a cross with a palm tree on each side; the little bit of emphasis thus given to the centre pier is echoed in the design of the railings on the street level, where a simple bit of open-work design is introduced in the middle of the plain upright railings. This is one of the few drawings with a plan, showing the ground floor rooms and a very small chapel in the rear. The "design for a new building in King William-street" (1596) shows a street building with a circular angle bay carried on corbels, which, above the ornamental balcony railing, becomes an octagon; the design of this same railing, as about the only bit of ornament in the building, might well have been drawn with a little more care; it seems to have been put in rather hurriedly.

1611: "No. 176, Tottenham Court-road," by Mr. H. Chatfeild Clarke, is a quietly treated piece of shop architecture with the lower portion occupied by a large arch which apparently runs through two stories of the shop. We should prefer to see the division of the stories recognised in the exterior design.

1627: "Design for a Country House," by Mr. Ambrose M. Poynter, is a properly illustrated house, with plans on a large scale. The question

of aspect is suggested by this plan; the author is to be commended for inserting a compass on it, an important detail so often neglected. The dining-room faces east, which is a great deal better than full south, the morning-room east and south; it might be a question whether, as far as mere aspect is concerned, the dining-room and morning-room should not change places; the drawing-room is south and west, the best aspect. The entrance at a re-entering angle, with its ante-hall and octagonal lobby, is ingenious but possibly a little too much of a puzzle for a visitor; the octagon lobby makes, however, a very agreeable feature in the opposite re-entering angle, in the perspective view of the garden side. We should not consider that immediately next to the larder, with contiguous windows, was exactly the ideal position for two of the servants' water closets.

1641: Sketch for the interior of a new room at "The Wood,' Sydenham" (Mr. C. H. M. Mileham), rather suggests the question whether "The Wood" is a dwelling-house or a hostelry. If the latter, this room, with the segmental ceiling with heavy panelling, would no doubt be the new coffee-room, and as such would look very well; it hardly suggests the idea of an entertaining room in a private house.

1642: "Houses, Castle Bromwich" (Messrs. Bateman & Bateman) is an agreeable quiet building of the mullioned-window type, in which most of the character resides in the treatment of the chimney stacks; plans are given, but cannot be well seen at the height at which it is hung.

1636: "'Windermere,' Blackheath" (Mr. Aston Webb), a pen drawing of a pretty country house with a formal garden, the upper part apparently treated with brick pilasters and plastered in the spaces between. The dining and drawing room have both direct south lights, a rather naïve arrangement. The porch, a flat roof on stunted colonnettes, also naïve. On the other hand, the manner of cutting up the gables and hips at the nearer end of the roof, where the chimneys come through, seems a little too exciting for the remainder of the design. Of the drawing hung by the side of this, No. 1635, we would ask, why is it on the line? It fills the space no doubt, but we cannot quite see any other reason.

1664: "New Premises, Duke-street, Grosvenor-square" (Mr. Caröe), a rather odd-looking brick building, with a ground story of brick arches on grey granite (?) piers. The upper portions of the angle pavilions are very slightly battered, so slightly as almost to look as if it were an oversight in the drawing, but the incident gives character to the building. Under the large arch at the side the projections which form a kind of frame to the windows are cut off at the bottom in a lob-sided manner, which also perhaps gives character, but is rather ungrateful to the eye. No plan.

1651: "No. 3, Berkeley-square" (Mr. H. Huntly-Gordon) is a very good little bit of street house architecture, for which we refer the reader to the lithograph illustration in the present number. Here originality and character have been obtained without any appearance of striving after effect; the little bit of carved work over the door has its value, and the porch projection carried up nearly the height of the front, and ending in a columned balcony, has a very good effect. In the treatment of the windows, the front railings, &c., there are little bits of unobtrusive detail which are very agreeable.

1665: "No. 16, Soho-square" (Messrs. Wimperis & Arber), looks, as far as one can judge from the drawing, rather too much as if the shallow three-sided bay or oriel, running through several stories, were standing on and carried by the balcony; an appearance which is not satisfactory to the eye.

1676: "House at Peterborough" (Messrs. Gotch & Saunders), is a kind of exhibit we approve of, because it shows on one sheet, though on a small scale, the materials for thoroughly explaining the design. We have a plan with the compass shown, two or three pieces of detail elevation, and a small general view. The style is based on Elizabethan, with some slight modern touches in detail here and there. The plan is well arranged in the main, but full south is not the aspect for a "morning room." The drawing was illustrated in our issue of May 16.

1679: "A Small Village Hall" (Mr. Walter Jaggard), an agreeable bit of village architecture: no plan.

1684: "Architect's House, Brooklands, Cheshire" (Mr. F. W. Mee), hardly conveys any special idea of being an architect's own dwelling-house, though there is a certain degree of picturesqueness about it. Titles of this kind look more interesting in the catalogue, no doubt; thus we had in a former exhibition "A doctor's house in the country," but neither in that case could we detect any special relation between the design and the title.

1688-9: "Plans and elevations of club house at Aldershot" (Mr. E. S. Prior). Mr. Prior shows sound sense in making the plans of the same importance as the elevations, and sending the two in on equal terms, so to speak; but he was not wise in sending them in separate frames, since it is just as likely as not that the hangers at the Academy would accept the elevations and refuse the plans. The design, which seems to include a club house, a theatre, and a cricket pavilion, is in an exceedingly simple picturesque style which rather reminds one of the proclivities of the modern American architect in giving expression to small rural houses.

1706: "New Industrial School for Girls, Ayr" (Messrs. Morris & Hunter), is a very pleasing example of the simple style of country school building, and it has the merit of being distinguished by a plan. Unfortunately the plan in this case serves to point out an incongruity of the design. The upper window on the right wing is dignified by a special columnar treatment and is much larger than the corresponding window in the opposite wing, but the plan shows that both rooms are dormitories, and of the same size, so that this is a little bit of architectural delusion.

1709: "The Kyrle Hall, Birmingham" (Mr. W. H. Bidlake), a water-colour view showing the building in rather foreshortened perspective, is disappointing, as the building seems deficient in special character and purpose in its treatment. The drawing, as might be expected, is a good one. No plan.

1710: "'Kerseley'" Warwickshire (Messrs. Bateman & Bateman), is a sheet containing some pretty water-colour sketches of a quiet old-fashioned house with mullioned windows, altered and enlarged in the same style. Small plans are given, and the compass indication not neglected. The dining-room, which faces south, is made out of the former dining-room and drawing-room thrown into one; the kitchen in the old house has been turned into a hall. The alterations seem to have been very well carried out so as to increase the accommodation and improve the disposition of the plan, while preserving the original character of the building.

1723: "Room designed to fulfil in one all the functions of the ordinary hall, dining and drawing rooms" (Mr. R. Barry Parker), seems to carry out its purpose by looking as like a nursery as possible; at least that is the kind of effect produced on the mind. And it is useless to design a room to fulfil the purposes of a dining-room and drawing-room. The very object of a drawing-room is to provide a room in which no meals are, or need be, taken. The drawing is a good pen-and-ink one, but the end proposed was hardly worth the trouble.

1724-5: "A Country House" Entrance and Garden Fronts (Mr. A. N. Prentice), shows perhaps a little too much effort after the picturesque; if it were an old house it would be a delightful one; as a design for a new house it is a little too archaic in style, except in the treatment of the octagonal entrance hall, which is both well-placed in the plan and effectively treated in the design. The row of four similar bay-windows along the long side of the drawing-room and close together, is a little monotonous. The design is shown in two charming drawings, and is at all events pleasant to look at.

1730: "Mansion in course of erection, Park-lane" (Mr. T. H. Smith) looks far too like a hotel in its over-gaudy architectural treatment. A plan is given, but no compass. The arrangement of the reception-room and dining-room, with the private communication passage between reception-room and stairs, is good. The entry is rather oddly planned, for at the right of the door is a nearly circular apartment called a vestibule, but which leads to nowhere, and which there is no need to pass into in entering the house. Such a room may have its uses, but it is not a "vestibule."

If the last named house suggests a city hotel, No. 1766, "Rosehaugh," by Mr. Flockhart, rather suggests a hotel in a tourist district. There is no plan to this large drawing, and it is therefore impossible to understand the meaning of the architectural treatment, except that the tower presumably marks the entrance, but the number of turrets, &c., and the general style of the design, suggest a hotel, designed to look imposing and important, rather than the reserve and dignity of style proper to even a large dwelling house.

Among various small things Mr. Paul Waterhouse exhibits a curious and very original little coloured drawing of "Almshouses, Darlington" (1746), Mr. A. Cox a "Design for Memorial Hall and Library at Edzell" (1755), a rural building with a good deal of character; and Mr. M. S. Hack "A Study for a Town House (1761) to which a certain originality is given by the treatment of the angles as wide strips of solid masonry in courses of alternating tints. Another small work worth mention is Mr. H. F. T. Cooper's "A Studio House" (1759), which is a characteristic little house illustrated by plans; from the proximity of the "boudoir" to the studio and the model's room one may conclude that this is for a lady artist, otherwise we do not understand the "boudoir" nor its position. The obtaining of a closet or cupboard in the dining-room by the simple expedient of fencing off one corner of it is not a very artificial method of planning.

In 1741 "Houses at Swanage, Hampstead, and Frensham" (Mr. C. F. A. Voysey) we have something novel both in the way of designing houses and showing them on paper. These are white—very white houses, with little sloped out buttresses on each side of the angles (which can hardly be constructively necessary), very green roofs and very red brick chimneys. We should doubt whether the effect in execution is quite like what is shown in the drawings, in which it is probably a little exaggerated; but there is no doubt a certain freshness and originality about these small houses. The plans, which are added, are open to criticism in some points; in one of them the kitchen window is opposite the fireplace instead of flanking it, in another the piece cut out of the corner of the study is rather a clumsy kind of arrangement.

1788: "New wing recently added to boarding-house at Rugby" (Mr. C. A. Nicholson) is a good characteristic piece of house building of its kind, treated with coupled brick pilasters, and a round-arched recessed porch with a heavy "school"-looking door, giving access to what is really a passage under the house into the small "quad" in there. A plan is given, showing the arrangement of the studies. Study No. 5 would be rather deficient in light, except on very bright days.

1774: "City Improvements, York; new buildings, Duncombe-place" (Mr. E. Kirby), is illustrated in our present issue (see lithograph), and shows the proposed method of occupying a large piece of vacant land to the south-west of the minster. The plan is not yet finally settled in detail. Regarding it as a building in close connexion with the minster, the architect has evidently aimed at giving a semi-ecclesiastical character to the buildings, a usual prepossession, and perhaps rightly, with architects building in cathedral cities, and in contiguity to the cathedral. An English cathedral city is in most cases a comparatively small one, a good deal dominated by its cathedral, and it is perhaps suitable that this should give the key to the general treatment of new architecture.

Among other drawings that may be mentioned are Mr. W. G. Scott's "London and Provincial Bank, Enfield" (1785), an effective drawing, in which the new building is shown in connexion with the large open space which it adjoins; Mr. Horace Field's "New House, Hampstead" (1734), probably good, but too high to see, and Mr. Paul B. Chamber's "Additions to Wye College" (1721), in which the quiet expression of a country building in collegiate Gothic of a very simple type is carefully kept up in the additions.

Generally speaking, the designs illustrating domestic or street architecture are better in the case of small houses than the larger ones. The small houses are mostly in very good taste, and in some cases exhibit a good deal of picturesque and pleasing invention. The large houses, of which there are not many, present to our thinking two opposite defects; on the one hand that of over-acted simplicity (or what seems so), as in Messrs. Ernest George and Yeates's "House at Causton" (1599) and Mr. Newton's House at Haslemere before referred to, on the other that of pretentiousness and over-abundance of architectural display, as in two instances already named. In short, the architectural study of small houses seems in a satisfactory state; that of large ones, as far as the Academy room is any test, is not so. We want some new types for the mansion.

THE TRINITY ALMSHOUSES, MILE END.—The Trinity Almshouses in the Mile End-road, which not so long ago were the subject of so fierce an agitation, are to be maintained, the Charity Commissioners having decided to retain them.

## RAILWAY BRIDGES FOR BRANCH LINES.

AT the last meeting of the Society of Engineers, held on the 1st inst., Mr. M. A. Pollard-Urquhart, M.Inst., C.E., read the following paper, entitled "Examples of Railway Bridges for Branch Lines":—

"The ordinary bridge carrying a railway over a road, or a road over a railway, is a familiar object to every one, owing to the number of them everywhere erected, and on account of both their number and variety an investigation into the cheapest and most useful form of bridge may be of interest. On any ordinary branch line of railway made under the present regulations of the Board of Trade there will generally be about three bridges per mile over or under the railway, and it is therefore evident that by adopting the cheapest effective kind of bridge, a considerable amount of money may be saved. Most of the bridges mentioned in this paper are for a single line; small branch lines being the kind that chiefly remain to be constructed in this country.

*Public Road Bridges over the Railway.*

The material for constructing these bridges must necessarily vary with the locality, but the author proposes to compare the respective cost of an arch bridge over the railway in a cutting with the old-fashioned box wings and the same bridge with splayed wings. In comparing the cost of these and other bridges, the following prices have been taken:—

| | Per cubic yard. s. d. |
|---|---|
| Excavation ... ... ... | 1 6 |
| Masonry in abutments and wings | 18 0 |
| Brickwork in arch ... ... | 22 0 |
| Masonry in parapet ... ... | 20 0 |
| Ashlar ... ... per cub. foot | 2 0 |

The box wings are to be seen on a considerable number of public road bridges, and they certainly have the advantage of looking neat, both from the road and railway, and of being easy to design and build, but in point of cost they do not compare favourably with the splayed wings. By designing the wings to catch the slope of the road approach half way down the cutting the length and height of the wings are much reduced, and a structure of equal stability is secured at a lower cost. The abutments are 5 ft. thick, with a counterfort, and in both cases the batter of the wing walls is 1 in 12. The saving by using the splayed wing type amounts to 43 cubic yards, which at 18s. per cubic yard amounts to over 38*l*. It is also a common practice to carry the masonry parapet the whole length of the wings when they are parallel to the road, but where the wings slope away from the road this is evidently impossible, and a still further saving is made. The one objection to splayed wings is the difficulty of securing a satisfactory bond with the abutment, but this is a question of watching the workmen, and can well be overcome.

It has been the practice of late to use girders with jack arches, or trough flooring, to carry the road, but except where the crossing is considerably on the skew, it is nearly always cheaper to use brick arching. Comparative designs were shown by the author of a girder and an arch bridge. The depth of the girders is 1 ft. 6 in., and the dead load about 45 tons distributed over five girders; the arch is constructed of four rings of bricks. The width of the roadway has been taken at 25 ft., and the centres of the girders at 6 ft. 3 in. with jack arches between them. The cost in these two cases works out at 524*l*. and 667*l*. respectively, showing a saving in favour of the brick arch of 143*l*.

In the case, however, of double line bridges the saving would not be so marked, as the arch has to be built much higher in the middle to allow of the necessary headway over each line at a distance of 5ft. 6in. from the centre of the bridge. The raising of the arch but slightly increases the masonry, but in cases where there is a long road approach, every foot of height increases the earthwork and metalling. As an instance of this, the author drew attention to a diagram of a double line bridge over the Forfar and Brechin Railway at Careston Station. It would be noticed that the approach was long, and had an arch, as shown by dotted lines, been used it would have raised the bank of the approach by 2 ft., and therefore lengthened it by 80 ft., and have increased the metalling by 222 square yards, and the earthwork by 2,812 cubic yards, an excess amounting to 100*l*., which would considerably reduce the saving of an arch over girders.

In cases where the railway is in deep cutting and is crossed by a public road, the large amount of masonry required for the wing walls makes a modification of the ordinary design desirable. This is accomplished by covering the space between the side of the formation and the top of the slope with an arch, and thus dispensing with long wing walls. A diagram was shown of a bridge of this kind now being erected on the East Fife Central Railway. The piers are 3 ft. thick, and the arches have four rings of bricks. The appearance of bridges of this kind is pleasant, and they effect a small saving in total cost.

*Public Road Bridges under the Railway.*

The span of these bridges usually varies from 20 ft. to 35 ft. on the square, and the general practice is to use girders to carry the railway. One reason for this is that no two roads come exactly the same width or the same angle of skew, and girders are easier to proportion to these varying conditions. The style of superstructure most often used for single lines consists of two steel girders with cross girders resting on the lower flanges of the main girders, and the flooring consists of either buckled plates or 4 in. creosoted planking. The cost of such a bridge for a single line and over a 25 ft. road works out at 487*l*. A bridge of this type is now being erected on the East Fife Central Railway. The span is 25 ft., the thickness of the abutment from 6 ft. to 4 ft., and the weight of the steel work 12 tons. The dead load is 36 tons, and the live load 61½ tons, being at the rate of 2½ tons per foot run. These weights give a stress in the centre of 60 tons, and the girders are designed to carry this.

It frequently happens that it is a matter of importance to keep the distance between rail level and the surface of the road under the bridge as low as possible, and to accomplish this various forms of flooring have been introduced in practice. Lindsay's troughing and others of that description are equivalent to increasing the number of cross girders until they almost touch, and, by spreading the weight over several cross girders or troughs, diminishing the strain of each one, and thus permitting them to be made shallower. In the bridge just described, the distance from rail level to the under side of the main girders is 3 ft., but by using troughing and by carrying the rail on a 7-in. running beam resting direct on the flooring, this distance can be reduced to 2 ft. Comparing the superstructure of a bridge having a floor of cross girders and buckled plates, with the superstructure of a bridge having a floor of troughing, there is a saving of 14 cwt. in favour of the former. The saving in point of cost is not large, but in the case of ordinary cross girders and buckled plates, the delays in delivery are got over, and it has always been found that troughing, especially in the case of skew bridges, is more difficult to erect.

*Bridges for Occupation Roads.*

In the case of a farm road over a railway, the style of bridge of course depends to a large extent on the acreage, the product of which has to be led over it. The width of the roadway is generally from 12 to 15 feet, and the gradient of the approaches from 1 in 12 to 1 in 16. A serviceable type of bridge over a single line of railway and which will carry any weight that is likely to be taken over it, is one in which the superstructure consists of steel joists 10 in. by 5 in. with 4 in. creosoted planking or concrete jack arches for the flooring. A thin layer of asphalte is spread on the planking and the road metal is thus provided with a good foundation and will not injure the timber. The cost of such a bridge with splayed wing walls, timber floor, and wrought-iron parapet, carried by the two outside joists, works out at 287*l*. If concrete be used in the form of jack arches between the joists, the cost would be increased to 291*l*., owing to heavier joists being required to carry the extra weight. The difference in cost is not large if materials for concrete can easily be procured.

It is often the case when an occupation bridge is not situated on the main haulage road to a farm that the produce of a comparatively small acreage only has to be taken over it. In such a case as this a bridge built entirely of timber answers the purpose, and effects a considerable saving, the cost of such a structure being only 198*l*. Bridges of this type are not designed to carry traction engines, but for loads of about five tons they answer the purpose well. If the timber is of good quality and is kept well tarred, it will be many years before any renewals are required.

In carrying the railway over a farm road, in order to save headway it is a usual practice to use trough girders. These girders have to be very shallow in order to clear the moving parts of the locomotive, and also to enable the platelayers to drive the chair spikes, and are, therefore, only suitable for small spans such as are met with in occupation bridges. In a bridge of this class now being erected on the East Fife Central Railway, the rail level is only 1 ft. 2 in. above the bottom of the girder, and, in this particular case, it enabled the necessary headway to be given without disturbing a large covered drain which the line crossed at that point. These girders are proportioned to carry a rolling load of 3½ tons per foot run, and weigh about 21 cwt. each. The cost of this bridge works out at 291*l*.

*Bridges over Water Courses.*

The author then gave a few examples of bridges carrying a railway over water courses. One of these was a viaduct about 330 ft. long carrying a single line railway over the River Eye in Berwickshire. The extreme height of the rails above the bed of the river is about 60 ft. Owing to the fact of there being a brick works close by, and also that a large amount of broken stone, sand and gravel was available close to the site, it was determined to construct the abutments entirely of concrete, and the piers of concrete cased with brick. The abutments were left uncased as they were almost entirely covered by the earthwork. The concrete was made of seven parts of broken stone, sand and gravel to one of Portland cement, and in the abutments large stones were bedded in them. The brickwork of the piers consists of nine courses of 18 in. work alternating with nine courses of 9 in. work and the concrete was filled in after 18 courses had been built and a reasonable time allowed for the brickwork to set. This mode of construction was most successful.

The superstructure consists of ordinary lattice girders at 8 ft. centres with cross girders of 10 in. by 5 in. rolled joists placed on the top flange of the main girders and projecting over on each side. The weight of the girders was 92 tons, being nearly 8 tons each. The flooring was of 4 in. planking, and the rails were carried on longitudinal beams 12 in. by 14 in. The time occupied in the construction was six and a half months, ten weeks being taken for erecting the girders. The cost of this viaduct was 3,709*l*. or less than 12*l*. per foot run, but this low price was due to exceptional circumstances. Another bridge described was one of 95 ft. span, over the river South Esk in Forfarshire. This bridge had to be built for double line, although only a single line of rails was used. The abutments are of red sandstone resting on concrete foundations, and rock was met with on both sides within a few feet of the surface. In designing the main girders, the dead load was taken at 112 tons, or 56 tons per girder, and the rolling load 1·65 tons per girder. The cross girders are 3 ft. deep, being made of that depth so as to allow a satisfactory attachment to be made to the main girders. The rails are carried on longitudinal running beams, 14 in. by 7 in., resting on steel rail bearers, and the flooring consists of flat ⅜-in. plates. The total time spent in constructing the bridge was twenty-three weeks, the erection of the girders occupying seven weeks. The total weight of steel work amounted to 95 tons, and the cost of the bridge was about 2,500*l*.

Another example was a bridge of 60 ft. span for a double line over the Noran Water in Forfarshire. This mountain stream is very liable to sudden floods, although usually but little water flows down it. The span was fixed at 60 ft., and as there was ample headway, the three girders carrying the load were put underneath the railway. The cross girders consisted of 10 in. by 5 in. steel joists, and the flooring of flat ⅜ in plates. The weight of the steel work amounted to 42 tons, and eight weeks were occupied in erecting the girders. In the cross section of this bridge an outside guard rail was shown. The Board of Trade regulations on this subject provide for outside guards to be fixed on "important viaducts," but the term is difficult to define, and bridges which cannot be called important often have to be fitted with them. The bridge cost about 1,844*l*., a fairly large sum for a bridge of this span.

In designing bridges, care should be taken to avoid corners as much as possible. The pilasters which often used to be carried down the whole depth of the bridge in railway structures, were expensive luxuries, and are not often used now. It certainly seems a waste of money to ornament a bridge under a road, as the ornamentation cannot be seen either from the road or the railway."

## THE ARCHITECTURAL ASSOCIATION:

### ANNUAL DINNER.

THE annual dinner of the Architectural Association was held on Friday last week at the Holborn Restaurant. The chair was occupied by the retiring President, Mr. W. D. Caröe, who was supported by the President-elect, Mr. Beresford Pite, the President-elect of the Royal Institute of British Architects, Professor Aitchison, A.R.A., and Messrs. Thomas Blashill, J. M. Brydon, Thomas Drew, R.H.A., Talfourd Ely, M.A., F. W. Pomeroy, G. H. F. Prynne, W. H. Seth-Smith, and others.

The toast of "The Queen and the Royal Family" having been disposed of,

The Chairman proposed "The Royal Academy and the Royal Institute of British Architects"—a dual toast, he said, which he might call the toast of "The Royal Artistic Societies." The aim of the two societies was, he supposed, virtually the same, viz., to further the progress and practice of art in the country. Their methods were very divergent, but he thought he did well in coupling them together, since Professor Aitchison, an ornament of both societies, would respond to the toast. It was, perhaps, true that the Academy did not quite do for architects what architects wished, but he was bound to say that many of his hearers, if occupying the positions of the present academicians, would be inclined to pay little attention to the criticisms of the outside world. Architects recognised that the Academy was the chief representative body of art in this country. The Academy deserved their good wishes, both in its present misfortune and sorrow, and in its recent loss. As to its present sorrow, he was sure that they would agree with him in hoping for the speedy recovery of that most distinguished of living English painters, Sir John Millais, the President of the Royal Academy, and as to its recent loss, that was a nation's loss and very specially an architect's loss. If there was one thing more than another which the Academy might be said to lack, it was artists of wide sympathies and knowledge of all other arts in addition to one, and in losing Lord Leighton the Academy lost just such a man. His sympathies in regard to art were universal, and it was one of the most graceful and happy acts of the Royal Institute of British Architects to honour itself and Sir Frederick Leighton by making him the recipient of the Royal Gold Medal. He asked them to drink to the good time when every President of the Royal Academy should be worthy of receiving, for his architectural attainments, the Royal Gold Medal of the Institute, and he would ask them to drink to the time when the irresponsible Associates of the Institute would all become Fellows, with increased responsibilities and increased subscription—when there should be in consequence no more deficit; when Councilmen should come and go, and not go on for ever, and when the Council of the Institute should administer, and the architectural profession gladly accept, counsels of perfection, which would redound to the honour and dignity of all of them.

Professor Aitchison, in reply, said that architects ought to be grateful to the Royal Academy, because, until its institution, there was no body that represented architecture in this country. The Academy was the first that gave some instruction by its lectures, and also an opportunity to architectural students who had distinguished themselves to go to Rome. The Academy had done a great deal for painting, sculpture, engraving, and architecture, and it had fostered the art of painting in England in such a way that all nations now acknowledged the existence of an English school; while, at the time of the 1855 International Exhibition in Paris, it was by no means the case. Now he did not think that they would find any distinguished French artist who would not admit the existence of a distinct school of English painting. The Academy created an architectural school some few years ago and arranged to give instruction in architecture, and so far as it went, he thought that no one who had had an opportunity of judging would deny that it was a most useful addition. There was also one of the finest collections of architectural casts in its schools which the architectural students had access to. He, perhaps, held rather peculiar views on the subject, and was inclined to think architects as the greatest artists, as they had to arrange and construct for utility, and yet to raise the proper emotions as well; still, he did not think that all were gifted with all the talents and he would rather see them good architects alone than indifferent architects and ornamentalists. There were matters that could be improved at the Royal Academy and he hoped to bring before the notice of the Council the things which might be improved. It was an advantage to the people of every country, for those who professed certain things, to have a local habitation and a name; and the Academy gave this to artists; besides which it gave instruction in all the visual fine arts gratis, which was a great advantage to those who were not blessed with a fortune. As to the Royal Institute of British Architects, like the Academy it gave a local habitation to architecture. He would call attention to the fact that since the institution of the examinations, there had been a great improvement in the architecture of London; so much so, that he heard a foreign architect say that if the improvement continued, London would be one of the finest architectural cities in the world. He was of opinion that in London and all large manufacturing towns they must look forward, and that shortly, to a very much larger adaptation of coloured and enamelled terra-cotta to buildings. It was obvious that in a country where there was so much damp, so little sun, and, in towns, such an enormous quantity of soot and dust, the use of that material would tend to cure the depressing effect of those agents. It would greatly raise the spirits of the townsmen to have their buildings light and charming in colour, and also to be able to wash them when necessary. There was nothing he so much desired as to see London the greatest architectural city in the world—the greatest city of architectural excellence.

Mr. J. M. Brydon, in giving the toast of the evening, "The Architectural Association," said that the members of the Association were not only earnest students of architecture, but they were the hope for the future architecture of this country. In the matter of education which the Association had so much at heart, he was glad to know that the work at Great Marlborough-street was being carried on successfully. It was an open secret that their President had recently invited some gentlemen who were interested in architectural education to meet and discuss the subject, and whatever might be the result of that meeting, he (the speaker) hoped that the nucleus of any future scheme would be the Architectural Association. The Association had been an educational body from the beginning of its existence, and whatever educational establishment was set going in London—whether a school or a university, of architecture—it ought not to be managed by any other body but the Association, which had so well learnt that great problem in life of how to help themselves, and, after themselves, others. Another of the pleasing qualities of the Association was the element of comradeship. He must also congratulate them on the character of the Presidents they had had—men who were in sympathy with the young and rising and energetic thought of the day. This fact spoke well, not only for the Association, but also for architecture, and he hoped that their Presidents would always be artists first, in the sense of the higher branches of architecture. He also hoped that the Association would keep aloft the bright star of architectural excellence as the sole aim of their endeavours, and that architecture would flourish as it had never flourished before. They had a lot of leeway to make up, and the Association would have a great deal to do in making up that leeway. They all had but one wish in regard to the Association, viz., its success and prosperity, their ultimate object being the advancement of architecture. The toast was coupled with the name of the retiring President, Mr. W. D. Caröe.

Mr. Caröe, in the course of his response, referred to the regrettable absence of their late President, Mr. E. W. Mountford, who, but for illness, would have been with them that evening. Their success in the past year had been the result of hard work and the happy union of the officers of the Association and the students, which had brought them to the end of one of their most successful years. Success in the future depended on their working together for the good of architecture, and, consequently, for the Architectural Association. In reply to Mr. Brydon, he might say that they intended to resist the competition of other bodies as far as they could, and to be as far as possible at the head of all future developments of architectural education.

The toast of the "Instructors and Studio Visitors" was then given by Mr. Thomas Drew. He said he had perhaps been selected to propose the toast as he had the honour to be a President of an allied society of the Institute—the meaning of which and its value he, with the utmost loyalty to the Institute and a good deal of thought, had been trying to find out and did not yet quite understand; but he did understand and estimate at its value, the membership of the A.A. to which he had belonged for twenty-five years, and had had solid returns in many friendships made in pleasant excursion days. He was a most diligent student of the Brown book, and he followed the proceedings of the Association with great interest. When he commenced his career, none of the present-day advantages existed, and so excellent did he consider the course of instruction given by the Association to be that when a parent or guardian brought his boy or "young orphan" to him as the local Pecksniff to be articled to him it was his custom to ask if their money would run to sending the young person to London for two years at least, so as to bring him under the educational influence of the A.A. In Dublin they had no such advantages. He had always taken a great interest in their classes, and he was glad that they were doing so well. With the toast he coupled the name of Mr. F. W. Pomeroy.

Mr. Pomeroy, in reply, said that it was because of the well-founded conviction of the value of art-teaching to students of architecture that it had been considered desirable to institute the Association classes and the special lectures, and he thought that the past record encouraged the instructors to hope for future success. The classes had maintained their high position and the Council had cause to be satisfied; at the same time they desired to see larger attendances and perhaps more enthusiasm on the part of the students. The falling off in the number of attendances was due to several causes—the opening of local polytechnics and the many facilities now offered students in other schools, and perhaps a tendency to crowd in too many lectures and classes in the course of the session. It was surely better for an architectural student to attend classes which had been carefully prepared for him by the leading men of his profession. An idea seemed to exist that it was only necessary for a student to attend a certain number of lectures, and that the instructors could do the rest by cramming. That was a mistake; the art of teaching was not cramming, but in disciplining the mind to think and the hand to work, and without the co-operative exertions of the students the instructor could do little. He desired to offer a word of warning to students against the tendency of pursuing prizes for their own sake, or for present honour. The student should keep before him one aim—the real advancement of his art.

Mr. Thomas Blashill, in proposing the toast of "The Visitors," said he regretted that there should be such a dearth of past Presidents on such an occasion, and he might mention that it was thirty-two years since he had been President of the Association. Some of their visitors that evening were present because they belonged to the arts allied to architecture. He was not one of those who believed that an architect should carry out all the work on a building, and he thought that perhaps they would be well-advised if they agreed to representatives of the subsidiary, or allied, arts carrying out those arts on the buildings which architects were responsible for. With the toast he coupled the name of Mr. Talfourd Ely.

Mr. Ely, in response, said that there was no doubt that London was the first city in the world in regard to its valuable collections of art and other objects of interest; but, he was sorry to say, those collections were from an educational point of view to a considerable extent wasted. There was a want of cohesion and of system. But there were a great many educational facilities to be had, and in the architectural profession they were apparently well provided for.

Mr. G. H. Fellowes Prynne then proposed the toast of the "President Elect," and in doing so characterised it as "the toast of the evening." The importance of the President of the Architectural Association in London could hardly be over-estimated, and if the Royal Academy was the representative educational body for art of painting in London, then they might fairly claim that the Association was the representative educational body of architecture. He said it advisedly, for he did not think that either the Academy or the Institute had taken up the subject of the education of architects in the way or in the spirit that the Architectural Association had. The object of the Association was far more than to educate students. Professor Aitchison had said that there had been a great improvement in the architecture of London since the Institute had established its examina-

tions, but he (the speaker) thought that the improvement was more likely due to the educational work of the Association, which was very thorough. Second to the instruction given by the Association he must place its social work. The chief failing of architects was that of despising one another's work, and if they could change all that and recognise and acknowledge the good points in their contemporaries' work, the result could be nothing but gain to architecture generally and to the Association in particular. In Mr. Pite they had a worthy successor of many previous excellent Presidents. He was not only most enthusiastic and energetic, but he had sound knowledge to guide him.

Mr. Pite said that he had felt for a long time that the main aim of the Association should not be merely the dry work of education. Education was everything up to a certain point, and they were all liable to think that that point was examination. If it was so—if they merely educated for somebody else to examine—the very life and soul, the life-blood of the Association would be dried up. Let them have as much hearty criticism, as many broad ideas on the subjects of education and examination as possible. There was room for all ideas and schools on these subjects in the Association. Their object, unexpressed in any of their formulæ, or even in their motto, seemed to him to be the planting, the encouragement, nourishment, and bringing to fruition of enthusiasm for architecture. Enthusiasm was absolutely necessary in art, for art without enthusiasm dies. They might look to Institutes or Academies—they might study history books, or books of Orders—they might join or work in studios, but where would they find any school for enthusiasm in regard to architecture if they did not find it in the bringing together of men of all ideas into one body in the Association? The architectural student had not a very happy lot if he had not enthusiasm; if he had not felt the fire, or been burnt by it, he was to be pitied, for he was no better than a mere commercial clerk, though his life might be a successful one from the financial point of view. But they worked with a higher idea than that; the object of the Association was not to train for commercial success, nor to promote professionalism: they existed to do one another good, and by friction and fellowship to generate enthusiasm. He had often reflected that the majority of the members of the Association were in offices where they saw very bad art, if art at all, and where there was no enthusiasm for art—for architecture as an art. He was quite in the dark himself for some years as to what the enjoyment of architecture really was, but his eyes were opened by reading the memorials of Augustus Welby Pugin, which kindled a little spark in him that was fanned into life when he joined the Association; for enthusiasm for their work could be implanted, and in the Architectural Association they could show how it could be done by union and friendship, and fellowship. If they put their whole heart and soul into all they did they would find delight even in the dry bones of party walls. The Association was the only body, it seemed to him, that could produce that feeling for architecture in the student. Let other schools and colleges train and send for examination and qualification their students, but let the Association be perfectly clear that it was for architecture as an art that it existed as a society. It seemed to him that with this as its goal it had a great future before it. The Association was the only body that could crystallise the architecture of England into a school with an effective style; he did not mean in mere novelty or original detail, but in the formation of a style bearing the emphatic mark of being the work of men with a set idea; the love of architecture for its own sake, and showing enthusiasm for the art for its own sake. They had no other body that could do this. The Academy could not do it, though it had done good work in bringing them under the actual influence of accomplished practising architects; and the Institute could not do it, for it knew nothing about it; but in the Association's studios the work was already being done. The work of the "School of Design" was exceedingly useful, and he hoped that their work would soon be brought together so that it would be possible to see what progress they had made in the art of design. The Association had the means necessary for developing an effective school of architecture, by collecting, disseminating, and enlarging ideas by criticism and mutual help and friendship. Enthusiasm of the kind he had referred to had existed before, of course, but it had been bound up in office families, as Scott's, Street's, and Mr. Pearson's, whose pupils had their masters enthusiasm. This the Association could do for the student without his being dependent on the accident of being articled to a great man. The Association could not become a close body like the Academy, or still more so, like the Art Workers' Guild; their franchise was universal, and as brother architects and brother members of the Association he urged them to help one another.

Mr. E. H. Sim then proposed the toast of the "Retiring Officers," coupled with the names of the President, Mr. F. T. W. Goldsmith and Mr. A. H. Hart, all of whom responded.

Mr. Caröe, in a few concluding remarks, said that the name of Mr. Stonhold should have been included, and he thought he ought to say that their thanks were due to their assistant secretary and registrar, Mr. Driver, whose value to the Association was very great. In wishing them farewell, Mr. Caröe concluding by reading some amusing verses which had been composed for the occasion by the "A.A. poet," Mr. Devey Browne, entitled "Farewell."

The proceedings then terminated.

## LEICESTER ARCHITECTURAL SOCIETY:

### VISIT TO ST. ALBANS AND HATFIELD.

ON June 11th and 12th the Leicestershire Architectural and Archæological Society will visit Hatfield House and St. Albans. According to the programme they are to arrive at St. Albans at 11.9 in the morning, and leave the Great Northern Station for Hatfield at 1.30. After seeing Hatfield House and the church they will return to St. Albans for the night and spend the next day looking at St. Alban's Cathedral (as it must now be called), leaving by the 4.46 train in the afternoon. The visit to the cathedral will be made, very appropriately, under the guidance of Mr. James Neale, F.S.A., whose splendid illustrative work on the building is known we presume to most of our readers.

Mr. Neale has prepared a chronological list of the work at the cathedral, which as it is of general interest and will be of value to all who visit the building, we give here in full.

### CHRONOLOGICAL LIST OF THE DATES OF WORK AT ST. ALBAN'S CATHEDRAL.

Mr. Neale proposes to limit his remarks to works executed before the Dissolution (1539) and still existing. The following list mentions in chronological order the works now to be found, from the earliest date to the middle of the 16th century.

*Roman.*—The tiles from the ruined city Verulam re-used in the building of the Norman Church by Abbot Paul.

*Saxon.*—The stone balusters in the transept re-used in the Norman Church.

*Norman.*—The eastern part of nave, six bays on north side, Paul of Caen, 1077—1093. Choir—The bays on north and south sides, Paul of Caen, 1077—1093. Central tower, Paul of Caen, 1077—1093. Transept (church consecrated 1115), Paul of Caen, 1077—1093. The arcades of the slype, on south side of south transept, Robert de Gorham, 1151—1166.

*Early English.*—Part of north western porch, John de Cella, 1195—1214. Part of central western porch, John de Cella, 1195—1214. Part of central western porch, William de Trumpingtone, 1214—1235. Part of south-western porch, William de Trumpingtone, 1214—1235. Four western bays on north side of nave, William de Trumpingtone, 1214—1235. Five western bays on south side of nave, William de Trumpingtone, 1214—1235. Additions to choir windows, William de Trumpingtone, 1214—1235. Sanctuary and foundations of the eastern chapels, John de Hertford, 1235—1260. Part of ante-chapel to lady chapel, Roger de Nortone, 1260—1290.

*Decorated.*—Part of ante-chapel, John de Berkhamstede, 1291—1301. Lady chapel, lower portion John de Berkhamstede, 1291—1301. Part of ante-chapel, John de Marynes, 1302—1308. Completion of ante-chapel, Hugh de Eversdone, 1308—1326. Lady chapel, upper portion, Hugh de Eversdone, 1308—1326. Five bays on south side of nave (fell down 1323; rebuilding commenced by Eversdone; clerestory was completed later), Hugh de Eversdone, 1308—1326. The remains of the cloister wall-arcade, Hugh de Eversdone, 1308—1326; Richard de Walyngforde, 1326—1335; Michael de Mentmore, 1335—1349. Shrine of Saint Alban. Rood screen. Doorway in south aisle of choir, leading to east walk of cloister.

*Perpendicular.* — Shrine of St. Amphibalus (erected by Ralph Whytchirche, sacrist), Thomas de la Mare, 1349—1396. Great gateway to the monastery, Thomas de la Mare, 1349—1396. Triforium windows on north side of nave and choir. Watching loft (about 1420). Choir ceiling. High altar screen, William Walyngforde, 1476—1484.

### THE PRINCIPAL MONUMENTS.

Early English tomb of the Hermits Roger and Sigar. Brass of Abbot de la Mare (executed in his lifetime), Thomas de la Mare, 1349—1396. Whethamstede's chapel, John de Whethamstede, 1420—1440. Duke of Gloucester's monument (died 1447), John Stoke, 1440—1451. Abbot Ramryge's sepulchral chapel (about 1522); Thomas Ramryge was abbot from 1492.

## ROYAL ARCHITECTURAL MUSEUM AND WESTMINSTER SCHOOL OF ART.

THE annual general meeting of the Royal Architectural Museum and Westminster School of Art was held on Friday afternoon last week at the Museum, Tufton-street, Dean's Yard, Westminster, when the President, the Duke of Westminster, K.G., presided.

The minutes of the last meeting having been read and confirmed, it was moved by Sir W. de Souza that the Duke of Westminster be re-elected President for the ensuing year, and that the Duke of Norfolk, the Duke of Rutland, the Marquis of Ripon, the Marquis of Bute, Earl Fortescue, the Earl of Wemyss, Lord Grimthorpe, Sir H. W. Peek, and Mr. Carew Cocks be elected as Vice-Presidents.

Mr. J. H. Pollen, in seconding the resolution, said a great deal of the enthusiasm for the architecture of the Middle Ages that was so strong forty or fifty years ago had cooled down, and it was therefore all the more to their advantage that they had in their President a nobleman who had taken great interest in the architecture of that period.

The motion was passed unanimously.

The Duke of Westminster, in reply, said he was not a devotee of Gothic architecture, but he inherited a house which was built in the most Strawberry Hill Gothic which had ever been seen, and his endeavours had been to make bad Gothic into better Gothic, under the able hands of Mr. Alfred Waterhouse, who had a difficult task before him, but who had to a great extent succeeded. He was glad to know that the Institution was in a flourishing state, and that the funds were increasing, mainly by the increase of the students' fees. The increase had taken place in the face of difficulties, such as the want of proper accommodation. With better accommodation no doubt the number of students would increase, as well as the usefulness and prosperity of the Institution.

Sir A. W. Blomfield, in referring to the annual report, from which we stated last week a few facts, said that the increased prosperity of the Institution was most satisfactory, but it made the Council anxious to enlarge their limited accommodation, and he might mention that there was every probability that they would be able to do so. He regretted that the annual subscriptions had not really increased, and he hoped that they would soon have more subscribers. In conclusion he moved that the report of the Council and statement of accounts and balance-sheet be received and adopted. He also moved that the following be elected as members of Council during the ensuing year, in addition to the President, the Hon. Treasurer, and Hon. Secretary, viz.:—The Earl of Wemyss and Mr. W. Carew Cocks (Vice-Presidents), Mr. C. F. Hayward, F.S.A., Mr. Sydney W. Lee, Mr. W. Pain, Mr. J. Hungerford Pollen, M.A., Mr. J. P. Seddon, Mr. Aston Webb, and, as representatives of the London County Council, Sir W. de Souza, Mr. Sidney Webb, Dr. Garnett, and Mr. W. R. Lethaby.

Mr. John Brooks seconded, and the motion was agreed to.

On the motion of Dr. Garnett, seconded by Mr. S. Lee, Messrs. W. Pain and P. D. Leake were re-elected auditors.

On the motion of Mr. Seddon, a vote of thanks to the President for presiding was cordially agreed to; and the Duke, in reply, said that it was very necessary to provide additional class-rooms, and no doubt they would be able to do that by acquiring premises adjacent to the museum on the south side.

The meeting then terminated.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Mr. W. Hilton Nash has removed from 5, Adelaide-place to Bush-lane House, Bush-lane, Cannon-street, E.C.—Mr. J. H. Hickton (Walsall) and Mr. H. E. Farmer (Wednesbury and Darlaston), architects, have entered into partnership, and will practise under the style of Hickton & Farmer at Budge-street, Walsall; Bank Chambers, Wednesbury; and Alban House, Darlaston.

## THE SEPTIC TANK SYSTEM OF SEWAGE TREATMENT.

WE have received particulars of a new process which has been named "The Septic Tank System of Sewage Treatment," and which is the outcome of experiments made by Mr. Donald Cameron, the City Surveyor of Exeter.

By the courtesy of Mr. Cameron and of Mr. F. J. Commins, surveyor to the patentees, we have been enabled to see the process in operation at the experimental installation at Belle Isle, Exeter. "The primary object of the system is to throw the whole of the solids in suspension in sewage into solution, and so render it easily dealt with by filtration or irrigation, and at the same time to put it in such a condition that it will not be offensive to the senses nor be subject to any after fermentation."

The process is extremely simple, not entailing any chemical treatment, and consists in allowing the crude sewage to pass slowly through a tank from which light and air are excluded, the inlet and outlet being so arranged as to keep the upper portion of the contents undisturbed. As a result of this arrangement a thick scum is formed upon the surface of the liquid in the tank which constitutes a nidus for the generation of liquifying bacteria which attack the organic matters in suspension and render them soluble. The effluent from the "septic tank" discharges on to a filter consisting principally of coke breeze, where the process of purification is carried on by nitrifying bacteria, which convert the organic matter in solution into nitric and carbonic acid. Here the tank effluent accumulates until the chamber containing the filtering material is full, when, by means of an ingenious automatic contrivance, the chamber is discharged and the tank effluent diverted on to another filter.

The effluent from the filter is remarkably bright and free from odour, and, judging by the analyses submitted to us, leaves nothing to be desired. Green growth was noticeable at the point where the effluent discharged into the river.

The "septic tank" itself appears to be a successful modification of the method devised by Mr. Scott Moncrieff.

The system seems to have been tried upon experimental lines and with sewage of a domestic character, so that its capability of dealing with a variable flow, including heterogeneous trade effluents, remains still to be proved. An installation upon a somewhat larger scale is being carried out to deal with the St. Leonard's portion of the Exeter sewage, and it will be interesting to follow the history of a process which claims to set at rest the "great sludge problem."

## ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

A HOME Counties district meeting of the Association of Municipal and County Engineers was held on Saturday, for the purpose of inspecting the sewage works of Richmond and Twickenham and the filters and reservoirs in progress of construction by Messrs. Aird & Sons, at Hampton, for the Grand Junction, Southwark and Vauxhall, and West Middlesex Water Companies. Mr. A. W. Low, Hampstead, presided in the absence of the President (Mr. Escott), and there were present Professor Robinson, Westminster; Messrs. Fairley, Richmond; G. B. Laffan, Twickenham; Lovegrove, Hornsey; W. Weaver, Kensington; Dodd, Wandsworth; Parr, J. T. Eayers, West Bromwich; J. P. Barker, Islington; T. Cole, Westminster (Secretary); Savage, West Ham; Lewis Angell, East Ham; C. Jones, Ealing; Col. Jones, Aldershot; Lewis, St. George's, Bristol; A. T. Davis, Shrewsbury; J. Lobley, Hanley, and others.

Mr. W. Fairley, Engineer to the Richmond Main Sewerage Board, gave a description of the Richmond main drainage works. He said that the Board, in addition to the pumping station, precipitation works, &c., had about five miles of deep level intercepting sewers. These sewers were laid at such a level that the sewage of the whole district could be intercepted and gravitate to the works at Mortlake. The sewers varied in size from 12 in. to 40 in. in diameter, and were constructed of brick and cement, stoneware piping and concrete, and of cast-iron pipes. The gradients varied from 1 in 250 to 1 in 1,200. River water could be admitted at several points for the purpose of flushing. The ventilation was by means of sewer-gas destructors, plain ventilating columns, and gratings on the roadways. As a great portion of the district was not much above the level of high water in the river no overflow could relieve the sewers during rainstorms. Overflows had, however, been put down at two points, and additional overflows were in progress. The usefulness of these overflows was limited to the time when the river water was below or about half-tide. The works at Mortlake were situated close to the river. The total area of land purchased by the Board was about eleven acres, of which seven acres were enclosed, the remainder being still in the occupation of a market gardener. The works included a range of buildings containing all the necessary appliances for pumping sewage, carrying out the necessary operations for chemical precipitation and for pressing the sludge by means of filter presses. Cottages were also attached for the employees, together with stables and dock wharf for the unloading of goods. The eleven tanks had a capacity of about 1,200,000 gallons. They could be used for either intermittent or continuous flow. Adjacent to the tanks eight filter beds were provided having a combined area of 1½ acres. These filters were made up of sand gravel and loam soil, and sown down with grass. They had been in constant use since the works were opened five years ago, and were only now having the surface cleaned and renovated. The process of precipitation in use consisted of first a small dose of carbolic acid, and iron salts were mixed with the sewage as it entered the pump-well. After being pumped up the sewage received the addition of a small quantity of milk of lime, approximately four or five grains per gallon, and afterwards about seven grains per gallon of a mixture of sulphate of alumina, iron, &c. The pumping machinery originally consisted of three horizontal jet condensing pumping engines, each capable of pumping four million gallons in twenty-four hours, the approximate lift being 40 ft. Within the past two years additional pumping engines have been fitted and fixed, a vertical duplex pumping engine of the Worthington principle, capable of pumping about fifteen million gallons per day; a centrifugal pumping engine capable of lifting five million gallons, and two auxiliary Worthington pumping engines, formerly used only for pumping effluent water, have been fitted so as to pump sewage during rain storms, giving a further addition of four million gallons. The pumping power has therefore been increased within the past three years from twelve million to thirty-six million gallons. Steam is supplied by three Galloway boilers, 18 ft. by 6 ft. 6 in. each. The flues are on the Livet system. A Schwoerer steam superheater has been fitted within the past eighteen months, and no difficulty has been found in getting a superheater of 150 deg. above the temperature of the saturated steam. Numerous trials have been made on the different engines with saturated and with superheated steam. With the newest and best engines a gain of approximately 10 per cent. on the P.H.P. has been got, while with the more wasteful type of engine a gain of from 25 to 28 per cent. in the amount of steam used was the result from using steam highly superheated. Originally three 36-in. sludge-presses were erected in the pressing-house, the pressing being done by means of hydraulic forcing engines. The system, however, had very serious disadvantages, and the maintenance was extremely heavy. Recently three additional presses embodying several improvements have been fitted, and the opportunity taken of changing the whole system over from direct pumping to pressing by air pressure, one direct pumping-engine, however, being still reserved as a stand-by in case of a breakdown or anything going wrong with the air plant. The whole of the plant since its erection has worked extremely well, and has fulfilled all the conditions that were required of it, the plates having been tested in an unusually severe manner, but without any breakages. Large lantern lights have been fixed on the roof, and the sludge-pit and sludge vats ventilated continuously into the chimney shafts by a steam exhauster worked by the exhaust from the engines. The outfall to the river has been reconstructed, and is capable of discharging all the water pumped by the pumping machinery at high water. The whole of the work completed up to 1891 was designed and carried out by Mr. J. C. Mellis, and since 1891 the extensions, additions, new pumping and sludge-pressing machinery, have been designed and carried out under his supervision as Engineer to the Board. The annual amount of expenses for maintenance, repayment of capital, and payment of interest is about 14,500*l.*

In answer to questions from members, Mr. Fairley said that all the sewage effluent was filtered. The storm water was sent into the river direct, as they had the separate system throughout. The Board had been in communication with the Local Government Board to get a public act to apply to the Thames Valley, so that each authority could adopt powers to keep out of the sewers the roof water, and have an entirely separate system, because as they had to pump all the sewage it was a very important matter. The sewage was carefully screened, and was pumped out at the pressing-house. Generally speaking, all the sewage was filtered, but at night, when it was more dilute, and the early morning, it did not require to be filtered. It was above the standard of the Thames Conservancy, and at no time since the works commenced had there been any complaints. At low water it gravitated to the river, at high water it was pumped out. The settling was taken out of the tanks two or three times a fortnight, but it varied according to the weather. There had been nothing done at the filters for five years until this year, when the top soil was taken off, and fresh grass seed sown. The depth of the filter material varied from 16 in. to 2 ft. It was as clean as a waterworks filter. They had eight tons of pressed sludge per million gallons. The cost of pressing was from 2s. 2d. to 2s. 3d., and the cost of barging 2s. per ton. They could not dispose of the sludge in London. At the present time the Board had under consideration a scheme for enlarging the works, and if this was carried out they proposed to burn the sludge and refuse together. The only open gratings were in the rural roads; all the town gratings were closed, and the ventilation effected by shafts.

Mr. C. Jones, Ealing, proposed a vote of thanks to Mr. Fairley for his address, and for the interesting information he had given of the work.

Mr. Walker, Croydon, who seconded, said they were very much indebted to Mr. Fairley for the opportunity which he had given them of seeing such excellent works.

The vote of thanks was accorded with acclamation.

The members then drove to Twickenham, where Mr. Laffan gave a brief description of the works. The district, which has a population of 18,000, has the separate system. The effluent is filtered through filters composed of coke, gravel, and sand. They were informed by the Thames Conservancy that their effluent was one of the best in the district.

The party then drove to the intake and pumping station of the Grand Junction, Southwark and Vauxhall, and West Middlesex Water Companies, where the various works and machinery were explained by the engineers in charge, and a luncheon was supplied by Messrs. Aird & Sons.

## THE SURVEYORS' INSTITUTION.

THE twenty-eighth annual general meeting of the Surveyors' Institution was held on the 1st inst., at the Institution premises, Great George-street, Westminster, Mr. Daniel Watney, the President, in the chair.

The report of the Council stated that during the past year the membership had increased by 223, and that the investments had also been increased in the same period by 4,500*l.*, the total investments calculated at current prices now amounting to 35,759*l.* 16s. 3d. In London and Dublin 212 candidates came up for the professional examinations in March last, 143 being successful, while at the preliminary examinations in January 78 of the 117 candidates succeeded in passing. After dwelling on the proceedings of the year, which had been highly successful, the Council announced that a comprehensive scheme of rehousing had been determined upon. The present premises of the Institution, which include five houses, are to be pulled down, and a new Institution erected on the site, at a cost of about 30,000*l.*, and a ground rent of 1,000*l.* per annum. The plans provide for a large and more commodious lecture hall, a fine library, with accommodation for 15,000 volumes, a good reading-room, Arbitration rooms, and a Forestry museum.

The report was adopted, and the usual resolutions having been passed, and Mr. Daniel Watney being re-elected President, the proceedings terminated.

LIFE-SAVING APPLIANCES. — An exhibition of appliances and inventions for the saving of life is to be held at the Central Hall, Holborn, from July 9 to 18. There are to be Health Lectures by eminent professors, together with various demonstrations of Life-saving Appliances, some of which will no doubt come within the subjects of interest to our readers. The exhibition is to be held in aid of the Guy's Hospital Re-endowment Fund.

# Illustrations.

## WEST RIDING COUNTY COUNCIL OFFICES, WAKEFIELD.

IN the *Builder* for April 29, 1893, we published the principal elevations and two plans of the selected design for this building, by Messrs. Gibson & Russell. We publish this week the perspective view of the building, from the drawing (by Mr. Alexander McGibbon), which is now in the architectural room at the Royal Academy. The architectural features and treatment shown in this drawing are identical with those shown in the elevations previously published, but the position of the two fronts has been reversed; the elevation which nearly faces the spectator in this drawing, having been shown in the original elevations as on the other face, left of the angle tower, while the elevation seen on this drawing in foreshortened perspective originally occupied the front to the right of the tower.

The reason for the change was that Bond-street, to which the Committee rooms now face, is the larger and more important thoroughfare, and it was thought desirable to place the Committee room wing, which is the more important one architecturally, towards this street. The revised arrangement also permits of the more convenient grouping of the offices.

Considerable progress has been made with the new County Offices, and it is expected that they will be completed during next year.

A portion of the building is roofed in and the interior furnishings are being proceeded with.

The stone carving is being executed by Mr. Wm. Birnie Rhind, A.R.S.A., and comprises in various parts the arms of all the boroughs and cities of the Riding, with also the arms of the past Chairmen of the Council.

The stone used for the exterior is from Brockholes, Derbyshire; for the interior, white Hollington and Prudham. The roofs are covered with Peake's red tiles, and the fireproof floors are being laid by Ferguson, of Carlisle.

The general contractors are Messrs. Armitage & Hodgson, of Leeds.

## CITY IMPROVEMENTS, YORK:

### NEW BUILDINGS, DUNCOMBE-PLACE AND BLAKE-STREET.

FOR some years past regret had often been expressed concerning the partial shutting in of the western façade, with its flanking towers, of the celebrated minster by certain old buildings situated on the southerly side of Duncombe-place.

At length the City Council took the matter in hand, and wisely called in an expert of high professional character in the person of Mr. Alfred Waterhouse, R.A. After surveying the site, he advised the purchase and then the abolition of the old buildings to a certain line of limit. The Council adopted his ideas, the consequence being that a fine open space permits a long point of distance to be taken for a full and impressive view of the noble minster.

It was determined that no buildings should be erected which did not fall in harmony with the traditions of the cathedral architecture, and an endeavour was made in the new buildings shown in our illustration to comply with this desire. The near corner block, to be occupied as the Under Sheriff's offices, is already erected. The far group is the Probate and Wills office, and between will be commenced shortly the central block, which will be tenanted by the York Dispensary.

The builders employed are Messrs. Parker & Sharp, of York, Mr. J. H. Tarran acting as clerk of works. The architect is Mr. Edmund Kirby, of Liverpool, and the drawing from which the illustration is taken is exhibited at the Royal Academy.

## SHOPS, TEDDINGTON BRIDGE.

THE twelve shops we illustrate are about to be erected upon the bridge at Teddington, the corner shop being planned for a small hotel. The basement of each shop is to be used as stabling, with a general washing-yard, approached by a sloping way from the main road. The lower portion of the buildings is to be faced with local red bricks with Portland stone dressings, and the gables to be timber framing with rough-cast panels and frieze roofs of Broseley tiles.

The buildings will be erected on the land of the City and Suburban Freehold Land Company, Limited, of which Mr. H. Huntly Gordon is the architect.

## NO. 3, BERKELEY-SQUARE, W.

THE drawing represents the front of a house which the architect, Mr. H. Huntly Gordon, is building for his own occupation.

The site was a difficult one, and in order to get the dining-room the full width of the site (19 ft.) it has been placed at the back, thus leaving space in the front for a hall of good dimensions, and capable of being used as a small smoking-room or lounge on occasion, there being a duplicate stairway enabling visitors to reach the drawing-room on the first floor without passing through this hall.

The whole of the first floor is devoted to the drawing-room and boudoir, the upper floors contain seven bed-rooms, &c., mostly fitted with fixed lavatories with hot and cold water, and arranged with fitted fixed furniture.

The dining-room, hall, and staircase are of oak, and a great feature has been made of an elliptical plaster ceiling to the dining-room.

The front, overlooking the grounds of the Marquis of Lansdowne and Berkeley-square, is of simple but effective design, and has been executed in Winsley ground with a plinth of Portland stone. The architect has availed himself of some of the advantages in the new Act, and has built out a bay, using the upper story as a loggia in connexion with one of the bedrooms.

The drawing is exhibited in this year's Academy.

## ENTRANCE No. 46, GREAT TITCHFIELD-STREET, W.

THIS is the doorway to a large plain building erected for the Parish of All Souls, St. Marylebone, as a new Church Home, and for which Lord Grimthorpe acted as Chairman of the Building Committee. The front is of plain stock brickwork, and the doorway of Portland stone. The contract sum of 4,588*l.* has not been exceeded in carrying out the building. Mr. A. A. Webber, of Mortimer-street, W., was the builder, and the sculpture shown in the illustration (a special donation to the building) was executed for Messrs. Farmer & Brindley. Mr. Beresford Pite was the architect.

## No. 82, MORTIMER-STREET, W.

THIS house was recently erected for Dr. Dudley Buxton. Messrs. Matthews Bros., of Charlotte-street, Portland-place, are the builders. The materials employed are Portland stone and Fareham red bricks. The models for sculpture, representing Night and Morning, were made by Mr. J. Atwood Slater, until lately the instructor at the Architectural Association studio, and the carving was carried out by Messrs. Farmer & Brindley's sculptors. Mr. Beresford Pite is the architect.

# *ARCHITECTURAL SOCIETIES.*

GLASGOW INSTITUTE OF ARCHITECTS.—A quarterly general meeting of this Institute was held in the Rooms, 187, Pitt Street, on the 28th ult., Mr. T. L. Watson, President, in the chair. It was reported that the recent exhibition of prize drawings of the Royal Institute of British Architects, held in this Institute's Rooms, had been largely taken advantage of, and the meeting expressed their indebtedness to the Royal Institute for the opportunity thus afforded to students and others for the inspection of these drawings. It was intimated that the Council of the Institute had arranged with the R.I.B.A. to hold a Final Examination for Associates this month in the event of a sufficient number of candidates from Scotland and the North of England presenting themselves for examination. The convener of the Library Committee reported that it had been agreed by the Council to give a donation of 30*l.* to the Library Fund, and that a list of books to be purchased was being prepared by the Committee. The President intimated that the proposed exhibition of metal work would be held in October, and that circulars on the subject had been issued to the members and others, especially to selected metal workers and others likely to possess valuable old work. It was hoped that arrangements might be made for the delivery of a lecture on the subject during the exhibition. It was agreed to hold an excursion this year, and a committee was appointed to make the necessary arrangements.

GLASGOW ARCHITECTURAL ASSOCIATION.—A meeting of this Association was held at the Rooms, 187, Pitt-street, on Tuesday, when Mr. Alexander Orr read a paper on the "Designing of Wall-Papers." There is no medium where the taste of a person is more displayed than in the selection of a wall-paper, he said: Let us have them good. In the first place, good in design; in the second, skilfully coloured; and last, but not least, printed on good paper. A good block paper should never be destroyed within ten years of its production. In 1786 a piece of wall-paper was taken from the walls of a mansion house in Whitehaven, said to have been there for 200 years. It is well known to our manufacturers that most of the designs sent from our national schools of art to be reproduced as wall-paper are absolutely useless, because of the want of the necessary technical qualities, such as the regulation of repeats, and also the enormous cost they would entail when reproduced with a poor effect when done. In wall-paper designing one ought to have something to say, and then know how to say it. There is no limit to the motive one may employ. A good knowledge of botany is essential, as a knowledge of anatomy is indispensable to the drawing of the human figure. A well-filled sketch-book is the best aid to wall-paper design, when the particular plants or flowers embodied therein were out of season. It is important when choosing or designing a paper that the apartment where it is to be placed should be considered. In designing, Mr. Orr pointed out, one should shut his eyes to everything he has ever before seen, and think for himself. Then something will be produced of which at least it can be said, "It was an honest effort." The process of printing by means of blocks was gone into and thoroughly explained by the essayist. Samples of these blocks were on exhibition, as also were the rollers used in printing machine papers. Designs by Messrs. Voysey, Morris, Crane, Sumner, Day, Gwatkin, and others were exhibited. The meeting was a large and enthusiastic one, and after a discussion, taken part in by several of the members, was brought to a close by a hearty vote of thanks to the essayist.

## THE LONDON BUILDING TRADES' STRIKE.

THE result of the ballot of the carpenters and joiners on strike in the Metropolis was in favour of the masters' proposals. The rules submitted to the men were as follows:—1. That in the event of any objection to the employment of any workmen no strike shall take place prior to the matter being referred to the Board of Conciliation, whose decision shall be final and binding. 2. That any agreement arrived at shall terminate at six months' notice on either side.

A protracted conference between the representatives of the Central Association of Master Builders and the officials of the Amalgamated Society of Carpenters and Joiners, was held on the 29th ult. at the offices of the Association, 31, Bedford-street, Strand. Mr. Henry Holloway (President of the Master Builders' Association) occupied the chair. Mr. R. Rust (Secretary of the Carpenters and Joiners' Society) stated that the result of the ballot had gone in favour of the masters. The subjoined official statement was afterwards communicated to the Press:—"The members of the conference agreed upon a new code of working rules, providing for the constitution of a Board of Conciliation to deal with all cases of objection raised against the employment of any particular workman, and in pursuance of this agreement the men return to work on Monday next with the increased rate of wages. The settlement brings the principal building trades into agreement with the master builders, including the bricklayers, plumbers, smiths, and carpenters and joiners. No agreement with the plasterers has yet been arrived at. An offer of a rise in wages of ¼d. per hour to the labourers has not been accepted, but it is probable that this may be withdrawn if the dispute is prolonged."

The following official statement was issued on the 29th ult. to the Executive Council of the Amalgamated Society of Carpenters and Joiners to their members on strike:—"Central Committee of Carpenters and Joiners, 138, Salisbury-court, Fleet-street, E.C. Fellow Workmen,—At a conference between representatives of the carpenters and joiners and the Central Association of Master Builders, held this afternoon (Friday, May 29), a satisfactory settlement of the dispute was arrived at, including an advance of one halfpenny per hour, making a minimum rate of wages for all carpenters and joiners in the London district of tenpence per hour. The working rules, as amended, will be submitted to you in detail as early as possible. Therefore, under these circumstances, the Central Committee do hereby declare the strike closed from Saturday, May 30. The shops and jobs will be opened on Monday, and the work resumed under the new code of rules."

The Strike Committee of the Amalgamated Society of Carpenters and Joiners forwarded the

following communication to the President of the Central Association of Master Builders with reference to the dispute:—"*Re* conference of master builders and representatives of carpenters and joiners.—To Henry Holloway, Esq., Chairman of the Association, Bedford-street, Strand, W.—Delegates at this conference representing the carpenters and joiners beg most respectfully to express their strong desire that the Master Builders' Association will prevent further interruption and dislocation of trade by conceding the same advance in wages to the labourers which has been given to several other branches of the building trade."

At a meeting of the Central Committee of Carpenters and Joiners, the following resolution was carried unanimously:—"That we, the Central Committee of Carpenters and Joiners, decide to at once appeal to our trade for subscriptions in aid of the labourers remaining on strike."

On the 31st ult. a mass meeting and demonstration of general builders' labourers and plasterers on strike was held in Trafalgar-square under the auspices of the Federated Labourers' Council. Speaking took place from three sides of Nelson's Column. Mr. W. Stevenson (General Secretary of the Labourers' Council), who presided at No. 1 platform, said that the general labourers had been left to continue the struggle with the master builders, and at present it seemed that the strike would be continued for an indefinite period. The labourers claimed that they were entitled to receive an equal advance in wages as other sections of the building trade, and until they had been conceded that point they would not go back to work. Because they were labourers the master builders had only offered them an advance of ¼d. per hour, but rather than accept such a "dirty, miserly, and contemptible" proposal they would sell their very shirts from off their backs in order to gain their demands. Other speakers having addressed the meeting, Mr. D. Hennessey, Secretary of the National Association of Operative Plasterers, said that the plasterers would never accept the terms of the masters. More had been done to sever trade unionism as the result of the traitorous action of the bricklayers than anything he could imagine.

It is estimated that the three weeks' strike of the carpenters and joiners cost the four unions concerned about 15,000*l.*, and this sum has been paid out of the strike funds and the special levy of 3s. per week made on the men who resumed work where masters gave in on the new terms. At a meeting of the Executive Council of the Amalgamated Society of Carpenters and Joiners, held on the 2nd inst. at the headquarters, Salisbury-court, Fleet-street, E.C., under the presidency of Mr. J. Coulthard (Chairman of the Committee), it was unanimously decided to issue an appeal to the 30,000 carpenters and joiners throughout the Metropolis on behalf of the general builders' labourers in their efforts to obtain an increase of ½d. per hour.

The plasterers had another conference with the master builders on the 2nd inst., and after a long discussion, the "disability" rule was modified to run as follows:—"It shall be considered a violation of these rules for a strike to be sanctioned by the National Association of Operative Plasterers prior to the matter being referred to the decision of the Standing Committee on Trade." It was also agreed that the rules should be terminated by six months' notice, which was not to expire during the twelve winter weeks. These rules have been submitted to the men, and it is believed that they will be accepted.

# Correspondence.

*To the Editor of* THE BUILDER.

## RESTORATION OF ST. MARY'S CHURCH, OXFORD.

SIR,—Your readers will, I fear, be weary of the controversy on this topic, but I am obliged to appeal to the well-known fairness of the *Builder* for a hearing denied me in the proper quarter.

One of your contemporaries, the *Daily Chronicle*, last month attacked the work I have done at St. Mary's for the University in an article embellished with a large illustration. The publication of my reply to what I regarded as misstatements and gratuitous assumptions on the part of the writer was delayed for nine days, and only appeared after two complaints addressed to the Editor.

In the following week a fresh attack appeared in the form of a letter from the special correspondent of that journal, and a second illustrated article. The writer impugns my competency to judge of the need of repair, derides my affectation of regret that any repair should have been necessary at all, ascribes to me words which I never used, and volunteers the opinion that the old masonry, had I left it alone, would have outlasted the new work put in its place.

My reply to this second attack has not been published by your contemporary at all up to this date.

Common fairness—I might say common honesty—demands that when a public print makes an attack of this kind in an editorial or semi-editorial fashion, the person assailed should be allowed immediate and equal right of reply. As this is denied by your contemporary, I need only say he will not be troubled by any further reply from me, and that he may continue his attacks without fear of rejoinder.

THOS. G. JACKSON, A.R.A.

*Eagle House, Wimbledon*, June 4, 1896.

*** This letter was received by us at the last moment, subsequently to the "making-up" of the page containing our "Note" on the subject, and shows that the case against the *Daily Chronicle* is even more flagrant than we imagined.—ED.

## ANCIENT FRESCO PAINTING.

SIR,—I am unable to answer Mr. Brewer's inquiry as to the existence of any mediæval fresco painting in England; but as he suggests that fresco painting was never executed out of Italy, I would venture to remind him of the Aller Heiligen Chapel in the cloisters at Ratisbon. The interior of this most interesting baptistry, of the earliest Romanesque architecture, has been twice covered with painted decorations, in addition to later coatings of whitewash and Portland cement.

The first and original decorations appeared to me to be unmistakable fresco of a very fine description of material, a hard and almost polished surface being given to the coloured plaster, and the design seemed singularly adapted to fresco work, the ornamental portions having the character of an inlay design.

When examining the building in 1882, I thought that this fresco work was of a very early date indeed. I uncovered an interesting panel over the present altar by removing first the whitewash and then the second coat of decorations, which was a portion of a complete scheme of thirteenth-century figure decorations in distemper, which came away with the whitewash the more easily owing to the hard and glossy surface of the original "fresco" below. I have some sketches of the building indicating a few of the decorations that I shall be glad to show Mr. Brewer.

BERESFORD PITE.

## THE "INSTITUTE OF BUILDERS' CLERKS."

SIR,—May I be allowed space to clear away some confusion that appears to have arisen as to the respective functions of this Institute and the "Builders' Clerks' Benevolent Institution."

The latter Society confines its operations to giving grants and pensions to aged builders' clerks (and their widows) *in distressed circumstances*. This work is charitable and palliative, but our work is prudential and preventive. We seek to offer the young man facilities for the exercise of thrift, whereby he may prevent himself falling into "distressed circumstances."

It is urged that the rules deal almost solely with Friendly Society work; but it must be remembered that we are limited and hampered by legal restrictions as to what may and may not be inserted in the *registered rules*. Besides which, the Provisional Executive deemed it right to leave questions of test or examination of members, and the details of our education scheme, to be promulgated hereafter by the permanent committees.

These things will undoubtedly form a prominent part of the work before the Institute, and, together with the labour bureau and "out of employment" benefits, form, I venture to think, a sufficient *raison d'être* for its formation; altogether apart from the purely "Friendly Society schemes," which are quite optional.

JAMES A. HAM,
*Chairman.*

THE COMMISSIONERS OF SEWERS.—At the meeting of the Commission on Tuesday last a motion was unanimously adopted to consider a project for utilising the surplus water from the artesian well sunk in the City to the purpose of watering the streets, which would effect an important saving on the charges of the New River Company for the purpose. In the course of the discussion, complaint was made of the extraordinary charges made by the New River Company, and it was stated that in certain cases the amount charged for water was so high that champagne would have been cheaper.—As the result of a discussion that arose with regard to two different sites near the City end of Blackfriars Bridge, proposed for the erection of a statue of Queen Victoria, it was resolved to provide a rough model of the statue, with a temporary refuge in the centre of the roadway, to ascertain the effect on the traffic, the Streets Committee to have power to alter the positions of the surrounding refuges if necessary.

# The Student's Column.

## CARPENTRY AND JOINERY.—XXII.

### STAIRCASES.

IT will be convenient to treat this subject under the following heads:—

1. *Definitions and explanations of the various terms used.*
2. *The different kinds of wooden staircases generally in use.*
3. *The designing and construction of staircases.*

Definitions of the various terms are given below, and the letters in brackets after each refer to the corresponding parts marked in the illustration.

The *staircase* is the name given to the space that contains the stairs.

A *tread* is the horizontal surface of the step upon which the foot rests when mounting or descending the stairs (T). A *riser* is the vertical part of the step upon which the tread rests. The *going* is the horizontal difference between two risers (G).

The *rise* is the vertical distance between two adjacent treads.

A *nosing* is the front edge of the tread, usually moulded and projecting beyond the line of the riser beneath it (N). The line of nosing is an imaginary line connecting the edges of the nosing, which gives the angle of inclination of the stairs.

A *flier* is a step, the enclosing lines of whose tread are all right angles (F).

A *winder* is a step whose boundary lines are not all right angles (W).

A *curtail step* is one in which the outer edge is projected or curved, so as to form a base for the support of the newel. The terminating scroll of the handrail is often placed in such a position in order that it may not interfere with the width of the stairs. Sometimes the lower two or three steps are of curtail shape (C.S.)

A *flight* is any number of steps without a landing. The *going of a flight* is the distance between the extreme risers of that flight.

A *landing* is a horizontal platform at the top of any flight.

A *quarter space* is a landing of the width of the staircase.

A *half-space* is a landing, the whole width of the staircase. (H.S.)

A *newel* is a post receiving a handrail, and forming a junction with flights of stairs and landings or other horizontal surfaces.

A *handrail* is a rail (generally moulded) parallel to the line of nosings at such a height as to aid people in ascending the stairs, viz., about 2 ft. 8 in. above the treads, on level surfaces, such as landings; it is generally placed 3 ft. above the floor. A *wreathed handrail* is one that is carried from the top to the bottom of the staircase without a break.

*Balusters* are vertical posts to support the handrail; they should not be more than 5 in. apart.

A *ramp* is a sudden concave curve in one direction, generally occurring in handrails.

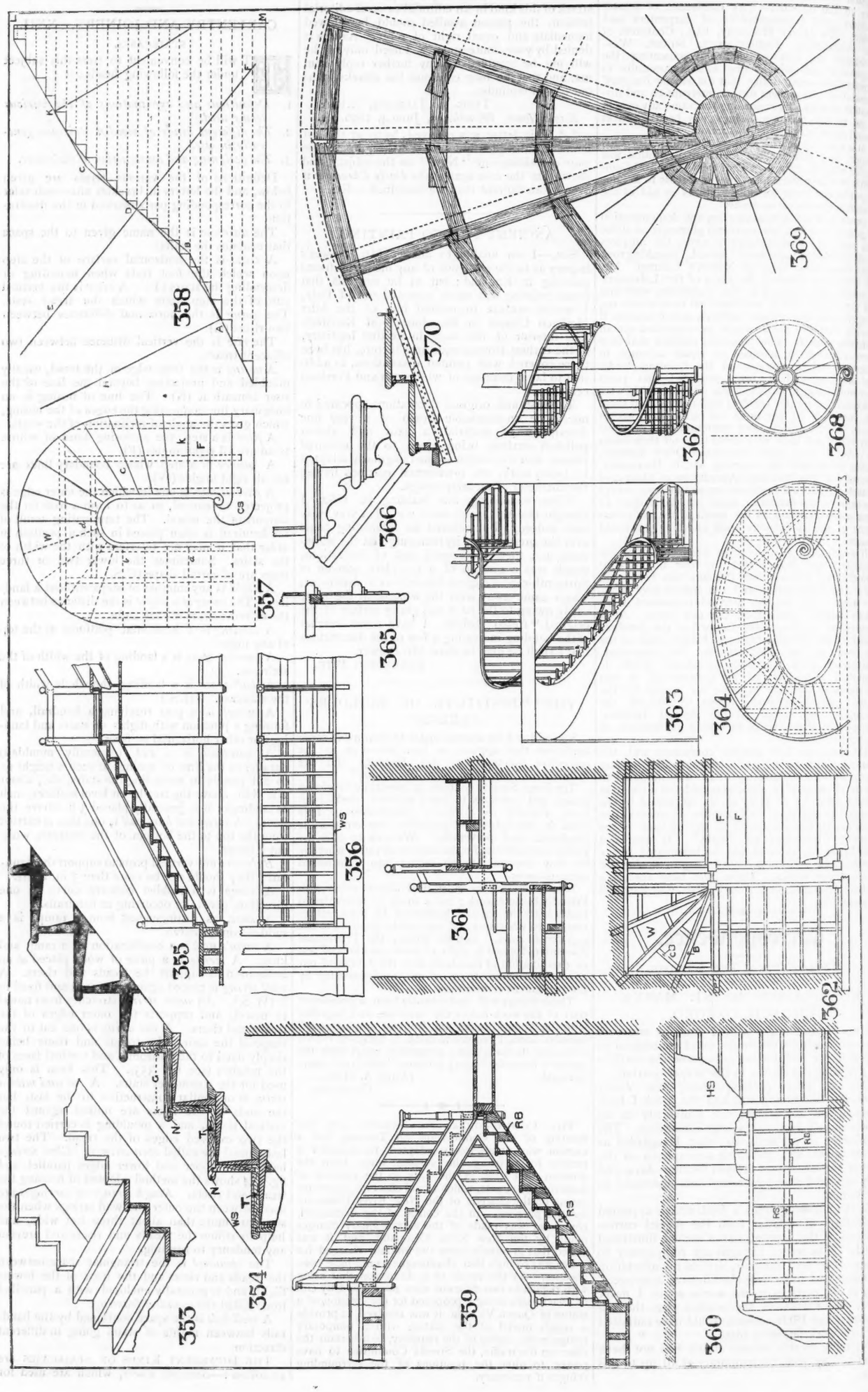
A *knee*, as distinguished from a ramp, is a sudden convex curve.

A *swan's neck* is a combination of a ramp and knee. A *string* is a piece of wood placed at an inclination to support the treads and risers. A *wall string* is placed against the wall and fixed to it (W.S.). An *outer string* stretches from newel to newel, and supports the outer edges of the treads and risers. A *cut string* is one cut to the shape of the stairs, the treads and risers being simply fixed to the horizontal and vertical faces of the notches (see fig. 353). This form is only used for the commoner stairs. A *cut and mitred string* is of similar construction to the last, but the ends of the risers are mitred against the vertical notch, and a moulding is carried round the two exposed edges of the tread. The two last named are called *open strings*. *Close strings* have their upper and lower edges parallel, and fig. 354 shows the method adopted of housing the treads and risers. *Rough strings* or *carriages* are used between the outer and wall strings when the stairs are more than about three feet wide, and help to stiffen the treads and risers and prevent any tendency to bending.

The *spandrel* is the triangular space between the treads and risers and the floor of the lowest flight, and is generally enclosed with a panelled front called the *spandrel framing*.

A *well-hole* is the space contained by the handrails between flights of stairs going in different direction.

THE DIFFERENT KINDS OF STAIRCASES are as follow:—*Straight stairs*, which are used for




*Illustrations to Student's Column: Chapter XVII.—Staircases.*

very narrow staircases. If there is a wall on either side, the wall string is fitted against each, and the treads and risers secured to these. If there is but one wall, the upper end of the outer string is secured to a newel-post if there is a break in the flight, and trimmers are carried from the posts to the wall, as shown in figs. 355 and 356.

*Dog-legged or newel stairs* are those in which the width of the staircase (or enclosure in which the stairs are formed) is divided longitudinally into two equal widths, and in which there is no well-hole.

*Open-newel stairs* have a well-hole between the flights around which the newels are arranged.

*Geometrical stairs* have the flights arranged round a well-hole, but have no newel posts, each step is housed into the wall-string, and is also supported by the outer string. It is also upheld by the step below it, and therefore the treads should be of substantial scantling. The hand-rail is carried from top to bottom of the staircase without interruption. These stairs require more skill in construction, and were much used in the period of the Georgian era. They are not, however, as a rule, either so strong or so satisfactory as the open newel staircase.

*Circular newel stairs* consist of steps whose extremities are supported by the wall at one end and at the other by a newel or column from which they radiate to the wall.

*Circular geometrical stairs* radiate from an open well-hole in the centre, and have their other ends pinned into the wall, each step also derives some support from the step beneath it.

THE DESIGN AND CONSTRUCTION OF STAIR-CASES are matters of great importance in the appearance and comfort of a house, the details of which are too often neglected. The design, of course, varies with the class of house, but the following points should always be observed. Stairs should consist of flights, running alternately in opposite directions. Such flights, as a rule, should not contain more than from ten to twelve steps, and they should not rise more than 8 ft. without a landing. The landings between the flights should be of a length and width not less than the length of the steps. Winders and isolated steps should be avoided as much as possible. The treads and risers should be proportioned as follows:—Multiply the rise in inches by 2, and add to this the width of the tread in inches; the result should be 23 in. From this it will be seen that the wider the tread the less will be the rise. Steps that have a wide tread and high rise are very fatiguing to ascend. Care should be taken that there is plenty of head room between the flights, and 7 ft. is generally considered the least that should be allowed for. Stairs should not, as a rule, be less than 3 ft. in width, so as to allow two people to pass. They should always be well lighted, more especially at the commencement and termination of a flight. A lantern light, at the top of an open newel staircase, is an ideal method. Where this is not possible light should be obtained on every landing.

Before planning a staircase, the following details should be ascertained: (1), the position and sizes of all openings which the stairs must not interfere with; (2), the possible width and length of the flights; (3), the heights between the floor levels, which should be marked on a story rod; (4), the position of the lowest and the top riser, which, of course, must be kept away from all openings, &c. The height of the risers must then be determined, so that they will go exactly into each story, and these should be marked on each rod. The plan can then be laid out when it has been decided what description of stair is most desirable, whether dog-legged, open newel, &c., avoiding winders as much as possible.

With regard to the latter, it should be kept in mind that at a distance of about 1 ft. 6 in. from the handrail, they should, if possible, be of the same width of tread as the fliers, because this is approximately the position of any one ascending or descending the stairs when using the handrail. The distance from the handrail should be half the length of the treads when they are of a less width than 3 ft.

In the case of geometrical staircases with winders, they are often drawn converging to the centre of the semi-circular termination of the handrail on plan, as shown by dotted lines in fig. 357. This, however, makes the treads very narrow near the handrail and very wide towards the wall, and as the inclination of the line of nosings of the winders is much steeper than that of the fliers, an awkward knee is given both to the string and to the handrail. To obviate this, the steps, with the usual exception of the first and last four are made to "dance," as shown by firm lines on fig. 357, *i.e.*, the inequality is distributed amongst them as follows: Let AB, fig. 358, represent the line of nosings of the fliers, and BC that of the winders, as shown in dotted lines in fig. 358. Bisect BC in D by the straight line EF, make BA equal to BD, and set up AH at right angles to BA, till it meets EF produced. From this latter point of intersection describe the arc ABD. In like manner find the arc DCK. We have now a flat cyma without any kee. From the vertical height LM, draw the horizontal lines through to the curved line of development which will give the risers and treads, which latter can be transferred on to the plan.

*The construction of stairs* is illustrated in figs. 359 to 370. Figs. 359 and 360 show the plan and section of a *dog-legged stair*. In this case there is a half-space landing carried by a trimmer going from wall to wall, and to which the newel is fixed, the outer string in both cases being tenoned into the latter. Rough strings (R.S.) are framed between the trimmers, and rough brackets (R.B.) are nailed on to them to assist in supporting the treads and rises. A plan and transverse section of an *open newel stair-case* is shown in figs. 361 and 362. It will be seen in this case that the rough string abuts on a pitching-piece (P.), and that bearers (B.) are carried across the quarter space into the wall so as to carry the risers for the winders, and these are sometimes stiffened by cross bearers (C.B.). A trimmer is carried to the third newel, which is fixed to it, and the stairs start ascending again from this point. The outer string is housed into the newels as before, and small lengths of hand-rail and outer string connect the second and third newels.

A *geometrical staircase* is shown in figs. 363 and 364 with dancing steps, both in part elevation and elliptical on plan. The position of the carriages is shown bolted thereon. The position of the principal carriages is determined in the following manner:—Lay a straight-edge on the plan and move it about until a straight line is found, which may be divided as nearly equally as may be by the intersections of the risers. The object of this will be manifest when it is remembered that, when the steps are of nearly equal width and rise, the angles will be approximately in a straight line, so that there are very few cases in which carriages may not be used for stairs if the above method be pursued. This method of forming the carriages of stairs was introduced by Mr. John Newlands, and is much stronger and more satisfactory than the older and more laborious method of framing for every step, and it has also the advantage of being less expensive. Figs. 365 and 366 show details. Figs. 367 and 368 show part plan and elevation of a *circular newel staircase*. The lower part of the newel is made up of staves of 2-in. planking, into which the risers and bearers to each step are fixed. It is best in this case to tongue the risers into the string, which should be in small pieces; a band of iron is then screwed round both, as shown in dotted lines on the elevation and in fig. 370, and then a thin casing of string board covers the whole. Fig. 369 shews detail of framing.

Handrails are often fixed to the balusters by means of an iron core, from ⅛ in. to ¼ in. thick, and of the width of the baluster, being screwed down to the latter and screwed up to the former. Treads and risers, in addition to being housed into the strings, should also have triangular glued blocks to stiffen them, on their underside. The methods adopted for setting out handrailing for different staircases is a subject which must be dealt with by itself, as it would require several articles to describe this somewhat intricate subject.

*Illustrations to Student's Column.*

CHAPTER XXII.—STAIRCASES.

353. Cut string stairs.
354. Close string stairs.
355. Section of straight stairs.
356. Plan of straight stairs.
357. Plan of "dancing" stairs.
358. Method of obtaining dancing stairs.
359. Section of dog-legged stairs.
360. Plan of dog-legged stairs.
361. Section of open newel staircase.
362. Plan of open newel staircase.
363. Elevation of geometrical staircase
364. Plan of geometrical staircase
365. Detail of geometrical stair.
366. Detail of geometrical stair.
367. Elevation of circular newel staircase.
368. Part plan of circular newel staircase.
369. Detail of circular newel staircase.
370. Detail of circular newel staircase.

## GENERAL BUILDING NEWS.

NEW BANKING PREMISES, COVENTRY.—The old banking premises belonging to the London and Midland Bank (and formerly the Coventry Union Banking Company), situated at the corner of High-street and Little Park-street, Coventry, have been pulled down, and new premises have been erected by Mr. Charles Haywood, jun., Coventry, at a cost of 10,000*l.*, from the designs of Mr. Frank Barlow Osborn, architect, Birmingham. The new build-ings, which were opened for business on Tuesday last, are in the Elizabethan style of architecture, are executed in Hollington stone and red bricks, and comprise, in addition to the banking premises, several suites of offices situated on the ground, first, and second floors. The banking-room, 40 ft. by 34 ft., is arranged to accommodate twenty-six clerks, and is approached from a vestibule at the corner of the two thoroughfares. The internal fittings are of polished walnut. The manager's office faces High-street, and is so arranged as to be easy of access from the vestibule, banking-room, and private speaking box. The vestibule is lined with glazed faïence. The strong rooms are situated in the basement, a hydraulic lift being provided communicating with the banking-room over. The remaining portion of the basement is appropriated to storerooms, lavatory, heating chamber, &c. The premises are lighted by electric light. The following works have been carried out by the firms mentioned:—Strong safe doors, Messrs. Whitfield & Co.; iron ornamental railing and ironmongery, Messrs. Hart, Peard & Co.; heating apparatus, Messrs. J. Biggs & Co.; hydraulic lift, Messrs. Waygood & Co.; grates and chimney-pieces, the Griffin Iron Foundry Co.; furniture and fittings, Messrs. J. Plucknett & Co.; mosaic pavements, tile, and faïence work, Mr. J. C. Edwards; gas and electric fittings, Messrs. Ford & Co.; and wrought-iron casements, Mr. H. Hope.

WYCLIFFE MEMORIAL OBELISK, LUTTERWORTH.—An obelisk is to be erected at Lutterworth in memory of Wycliffe, and an appeal is to be made for funds to build a house and museum adjoining. The architects are Messrs. Harding & Topott, of Leicester. The obelisk will be enclosed in a space measuring 40 ft. in diameter. Built of Aberdeen polished granite, and standing on a square four-step pedestal at the summit of a circular mound of grass, it will be 36 ft. high. The museum is to be built of brick, with stone facings. It will be set back 36 ft. from the obelisk, and the frontage will be concave to a corresponding radius with the mound. From end to end this building will measure 60 ft.

RESTORATION OF CHURCH, BISHOP'S CLEEVE.—The Church of St. Michael and All Angels at Bishop's Cleeve is undergoing repair. The architects' (Messrs. Middleton, Prothero, and Phillott) estimate of the cost of desirable, if not absolutely essential, restoration work was 4,000*l.* Lack of foundations and of sound masonry has necessitated general under-pinning, repairing, and draining of the walls, which were found to be filled with loose rubbish merely. In the fourteenth century walling of the north aisle a stone coffin was discovered to have been doing duty as part of the masonry, with the result that the wall was subsiding into it. The porch was in a dangerous condition, and it has now been made safe; the groining has been renewed, and the fan tracery under the priests' room has been firmly fixed. Internally, the whitewash has been removed from the walls—various patches of fresco being thereby disclosed—and chairs on a new floor-ing have been substituted for the old high-backed pews. Other alterations effected include the displacing of the east end window by one in keeping with the ball-flower mouldings, the provision of a carved reading-desk, the opening of the walled-up Norman window in the north transept, and the treatment of the chancel roofing. A new organ has also been provided. There is a division of opinion among the parishioners as to the advisability of removing a relic of the past in the shape of a Jacobean gallery, and for the present this remains. The building work is being carried out by Messrs. Collins, of Cheltenham and Tewkesbury.

GRAMMAR SCHOOL, PAISLEY.—The foundation-stone of the Paisley Grammar School and William B. Barbour Academy, which is being erected at Crossflat, Glasgow-road, Paisley, was laid on the 25th ult. The academy is being erected from plans prepared by Mr. T. Graham Abercrombie, architect. Paisley. It has a frontage to the Glasgow-road. The building is in the form of a square, three stories in height, and the central part is to be roofed over and a gallery there placed, so as to provide a hall for drill and examination purposes. On the ground floor will be the rector's and visitors' rooms, the English, junior, and initiatory departments, the library, and other accommodation. Separate entrances for boys and girls are at the right and left sides of the building, with classrooms at both entrances, whilst lavatory accommodation for the elder pupils is to be provided in wings on these sides of the school. The rooms for teaching classics, modern languages, mathematics, writing, &c., are to be on the first floor, which will also contain the teachers' rooms and a special apartment for music, this room being so arranged as to prevent sounds from reaching the other departments. A specially-arranged apartment, which will be over the main

entrance, will also be provided for needlework. The science and art departments, rooms for cookery lectures, a hall for lectures and science subjects, with rooms to be used as laboratories, and for preparation purposes, are to be placed on the second floor. The playgrounds and sheds are to be located behind the main building. The school is being erected in the Classic style, and, including site, the cost of the building will be about 30,000*l.*

CONSERVATIVE CLUB, HETTON.—The foundation stone has just been laid of a new Conservative Club at Hetton-le-Hole. The building will have a frontage on the main road of 58 ft., extending back for a distance of 100 ft. The exterior will be of Sherburn brick. The roof will be covered with Ruabon tiles in front, and each bay window will be surmounted by a spirelet of the same material. Upon entering the front doorway there is to be a vestibule and hall, paved with mosaic, on the right of which will be the bar counter. On the right hand of the hall will be the smokeroom, and on the left will be the reading-room and committee-room. By means of a swivel partition it will be possible to make the two rooms into one. Communicating with the bar there is a caretaker's house, including kitchen and two bedrooms. The billiard-room will be on the upper floor, extending the full length across the front. On the same floor is a games-room. The architect is Mr. Frank Caws, of Sunderland, and the contractor for the entire work is Mr. S. Branton, Sunderland.

HOSPITAL, TAVISTOCK.—A Cottage Hospital and Dispensary was opened at Tavistock on the 28th ult. The building has two stories, and the outer walls are of red brick, with white fire-brick facings, and slate roof. All the sick wards have a southern aspect, and on the ground floor a room will be devoted to the men's ward, to be furnished with four beds, while accommodation has been provided for an operating-room, matron's sitting-room, dispensary, bath and lavatory, kitchen, scullery, and laundry. Upstairs there is a room to be used as a women's ward, and furnished with four beds; and there are three other wards, which will probably be used for private cases, bedrooms for the matron and servants, and bath and lavatory. The floors are of pitchpine. At one end there is a room which may be used as a mortuary, and on the south side a terrace has been constructed, with gardens in front. The institution has been erected from a design prepared by Mr. Snell, architect, of Plymouth, and the contract, which was for 2,300*l.*, was carried out by Mr. H. B. Fuge, of Horrabridge.

BOARD SCHOOL, EXETER. — The foundation-stone of the new building which is to take the place of the old Paradise-place Boys' School, at Exeter, was laid on the 28th ult. The architect is Mr. James Jerman, and the contractors Messrs. Ham & Passmore. The new building, which is estimated to cost about 2,592*l.*, will be of brick, slated roof, Box stone dressings, and internally have a dado of glazed bricks. Accommodation will be provided for about 250 boys.

INFANT SCHOOL, NEW DEER, ABERDEEN.—A new infant school at New Deer has just been opened. The building stands in close proximity to the school for the older children. Accommodation is provided for over 150 scholars, the bulk of whom will prosecute their studies in a large schoolroom, provided with a gallery. Divided from the large schoolroom by glass doors is a smaller apartment. Behind the main building is a room for teachers, with lavatory, &c. Immediately adjoining the school a new schoolhouse has also been built, in which are a dining-room, study, four bedrooms, and all necessary domestic accessories. Among the improvements on the old building has been the conversion of the teachers' house into a cookery-room, capable of accommodating about ninety pupils. Mr. George Sutherland, Aberdeen, was the architect.

BAPTIST CHAPEL, PENARTH.—A new Baptist chapel, in connexion with the Stanwell-road Baptist Chapel, Penarth, has just been opened. On the ground floor of the chapel seating accommodation will be provided for 490 persons, and over 100 more can be accommodated in the gallery over the porch. The erection of the side galleries is for the present deferred, but when constructed space will be provided for another 200 worshippers. The contractor was Mr. Thomas Bevan and the architects Messrs. Jones, Richards, and Bugden.

CHURCH, MANSFIELD.—The Duke of Portland recently laid the foundation stone of the church of St. Mark, at Mansfield. The church will be in the fourteenth century Gothic style, and is to be built of Mansfield Woodhouse stone. There will be vestries at the east end and a morning chapel on the north side. At present there is no intention of erecting a tower or spire. A small bell turret only will surmount the red tiled roof. Accommodation will be provided for five or six hundred people. Mr. Temple Moor, of Westminster, is the architect, and the contractors are Messrs. Fisher Bros.

SUNDAY SCHOOL BUILDINGS, DESBOROUGH, NORTHAMPTONSHIRE. — On Whit-Monday the memorial stones of Wesleyan Sunday-schools were laid at Desborough. The site of the proposed structure is in Victoria-street. In plan the building will be rectangular. There will be an assembly-room, 44 ft. by 30 ft. At the back of this room are to be two classrooms, and beyond these is to be another room for the infants. Over the three last-mentioned rooms it is intended to erect a second story, which will be utilised for the storage of furniture, &c. The window dressings of the front, which will have circular heads, and the doorway are of Weldon stone. Kettering bricks are being used in order that the building shall harmonise with the chapel. The floor will consist of wood blocks laid on concrete. Accommodation is being provided for 350 children. Mr. J. W. Smith is the architect, and Mr. J. Buckby, of Rothwell, has the building contract.

SCHOOLS, LEWES.—The foundation stone has just been laid of the new Voluntary schools at Lewes. The architect is Mr. Richard Creed, of London, and the contractors are Messrs. Stewart & Sons, of Wellington. The amount of the contract is 3,258*l.* At present the premises are to accommodate 100 boys, 100 girls, and 210 infants. The two former departments are to be built facing Pelham-terrace, with a length of 122 ft. The boys' entrance is in Pelham-terrace and the girls' entrance in Talbot-terrace, each department having a schoolroom 42 ft. long by 19 ft. 6 in. wide, and a classroom 16 ft. 6 in. by 19 ft. 6 in. There will also be the necessary cloakrooms, lavatories, stores, and offices. The infants' department forms a separate block facing Talbot-terrace, with entrances at each end of the building. The schoolroom will measure 63 ft. by 22 ft., and there will be two classrooms adjoining, each 22 ft. 6 in. by 16 ft. 6 in., and also two cloakrooms. The whole premises are to be built of clamp bricks, with red facings and a tiled roof, the main entrance and doorways being of Weldon stone.

ARTISANS' DWELLINGS, DUBLIN.—The Corporation of Dublin, having acquired the "White's-lane area," a district lying to the west of Upper Dorset-street, have razed to the ground the existing houses, and entirely relaid several new roads upon which some eighty one-story cottages have been erected. The City Architect, Mr. C. J. MacCarthy, has in the designing of these dwellings followed the plan of making each house entirely separate and self-contained. Each cottage contains three apartments, besides a scullery and a drying-yard. The houses are built of red brick, all the materials employed being of Irish manufacture. They occupy five short streets. Another district which has been dealt with is known as the "Blackhall-place area." A compromise has been effected between separate cottages and the huge barracks usually so much objected to, and the result is the erection of a series of two-story houses, each of which contains accommodation for four families. As there are separate hall doors and yards for each tenant, the separation of the families is practically complete. There are eighty-five tenements in the Blackhall-place area, amongst them being fifteen separate four-roomed houses. Several of these contain shops. The latest scheme which has obtained the sanction of the Corporation is that for providing artisans' dwellings on the Bride's-alley area, a district which is bounded on the north by St. Nicholas Church, on the south by Bride's-alley, on the east by Werburgh and Bride-streets, and on the west by Nicholas and Patrick-streets. It is proposed to erect in this district sixty houses of seven different classes, which will afford accommodation for 128 families. Most of the houses will be two-story and three-story, and will be let in flats on the same principle as those in the Blackhall-place area.

BUSINESS PREMISES, MIDDLESBROUGH.—New premises for Messrs. Dickson & Benson have just been opened at Middlesbrough. Mr. John Johnson was the contractor for the whole of the work, and he has had as sub-contractors Messrs. Allison Bros. for the carpenters' and joiners' work, Messrs. Curtis & Bowman for the plumbers', glaziers', and gas-fitters' work, Mr. R. Mascall for the slating, and Mr. J. Hill for painting. The arcade has been covered by Messrs. Halliwell Bros., of Brighouse. The premises have been erected from the design and under the superintendence of Messrs. R. Lofthouse & Son, architects, Middlesbrough.

POSTAL BUILDINGS, WILLENHALL, STAFFORDSHIRE. — Plans for new postal buildings for Willenhall have been prepared by Mr. J. L. Baker, architect, of that town, which have been accepted by the authorities.

CHURCH, EXMOUTH.—On the 20th ult. a new church, dedicated to St. Andrew, and partially completed, was opened at Exmouth. The church, when completed, will seat about 650 persons, but at present accommodates about 360. The fittings are of oak, and as far as possible this material has been used throughout. A pulpit, reredos, organ case, and choir screen still remains to be erected. Externally, the design is Early English. The church is built with Berry limestone. Internally, Bath limestone has been used, the walls being faced with local red brick. The floor is of pine blocks, and the chancel floor of white and black marble. Mr. W. H. Perry, of Exmouth, is the builder, the architects being Messrs. Paul and Grogswell. All the glass in the windows is by Mr. Drake, of Exeter.

CHURCH ROOM, RICHMOND.—The opening of the new Church Room, at Christ Church, Richmond, took place recently. The new room is 58 ft. in length and 28 ft. in breadth. The roof is of pine. The floor is of wooden blocks, and the walls have been plastered. At one end of the room is a platform. Adjoining the Church Room is a kitchen. There is also a lobby for hats and a porch. The contract has been carried out by Messrs. J. Dorey & Co., of Brentford, from designs prepared by Sir Arthur Blomfield & Sons.

WESLEY NEW SUNDAY SCHOOLS, ROCHDALE.—The memorial stones of the new Sunday schools of Castlemere Wesley Chapel, Rochdale, were laid recently. The building of the new premises is being carried out by Messrs. Ashworth and Wolfenden, from the plans of Messrs. Waddington and Son, of Burnley. The cost of the building, together with that of the decoration of the schools, will be about 3,500*l.* The new structure, which is to be of stone to harmonise with the chapel, will comprise a large schoolroom and ten classrooms or vestries. The premises will be in T shape, the narrowest part being nearest to Castlemere-street. There will be three entrances, two by the side of the chapel, and the principal one in Boundary-street. The main room will stretch to the Castlemere-street end of the building. It will have a raised rostrum at one end and a gallery at the other, and underneath this will be two classrooms. The remainder of the smaller rooms will be grouped at the Boundary-street end of the building. Several of the vestries will be separated from the main room only by movable wooden partitions, and they will be so arranged that they may be added to the main school, which will then be capable of accommodating 700 persons. The building will be one story in height.

TURKISH BATHS, DONCASTER.—New buildings, to be used for Turkish baths and shops, are now being erected at the corner of the Station-road, Doncaster. The amount of the contract is between 5,000*l.* and 6,000*l.*, and it is expected that the buildings will be completed in October next. The premises have been designed by Mr. G. T. Edwards, of Sheffield. There will be six shops, with basements underneath of the same size. On the first floor there will be a suite of offices, in all nine rooms, six of which will be lighted by large windows facing the roadway. On the ground floor are other offices and caretaker's room. The whole of the frontage will be occupied with shops and offices, and the baths will be erected in the rear, the light being obtained from a glass roof.

PROPOSED RESTORATION OF BROADHEMPSTON PARISH CHURCH.—At a recent meeting of parishioners, which was held in the Board School, the report of the architect (Mr. Edmund Sedding) on the condition of the church was read. In his report, the architect said the church was a really fine Devonshire specimen of Early Thirteenth Century architecture, the windows in particular being beautiful examples of that period, and should be very carefully restored. After giving particulars of its condition and details of the extensive repairs required, the report concluded by saying the whole estimated cost would be from 1,200*l.* to 1,500*l.* Mr. Newnham proposed a resolution to the effect that the work recommended be carried out. This was agreed to.

PUBLIC BATHS, WALSALL.—New public baths, situated near the bottom end of Lichfield-street, have been erected at Walsall. The buildings include first and second-class swimming baths, slipper baths, and Turkish baths, with a residence for the superintendent, ticket office, boiler house, wash-house, and all other necessary appurtenances. The first-class swimming bath is in a hall 96 ft. 6 in. long by 46 ft. wide, the bath itself being 75 ft. by 30 ft., with a water depth ranging from 4 ft. to 6 ft. 6 in., and there are forty-eight boxes for bathers, and a two-tier gallery for spectators all round the hall. The second-class swimming bath is contained in a hall 60 ft. 6 in. by 37 ft., the water surface being 50 ft. by 25 ft., and the depth varying from 3 ft. 6 in. to 5 ft. 9 in. The other arrangements are much the same as in the case of the first-class bath, except that there is no gallery. The slipper-baths number seven for women and eighteen for men. The building was put up by Mr. R. Merton Hughes, Birmingham, from designs by Messrs. Baily and McConnal; and Messrs. Fellows and Wheatcroft carried out the electric-lighting arrangements, whilst the boilers and engineering appliances generally were supplied by Messrs. Bradford & Co., Manchester.

EXTENSIONS TO MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—The foundation-stone of the extensions to this institution has just been laid by Sir Hedworth Williamson, Bart., D.L. The scheme embraces the pulling down of one house on the east side of the present hospital, also a wing of the old hospital, the ground thus obtained giving room on the ground floor of the new building for a ward 60 ft. by 20 ft., accommodating ten beds, also for an isolation ward for three beds. These wards have also a ward kitchen and bath, lavatory and sanitary convenience, with shut off ventilating lobbies. The first floor is a repetition of the ground floor, the extension thus providing a total extra accommodation of 26 beds. On the first floor, also, advantage is taken of an improved approach to the operating theatre, and various other improvements are to be effected in the old buildings. The second floor of the new building is divided into seven bedrooms for the nurses and servants, with separate bathroom accommodation and special staircase from the ground floor. A new laundry is to be built at the rear, divided into washhouse and ironing rooms. Improvements are also to be effected on the ground floor of the old building, so that a servants' hall is obtained and the pantry and larder accommodation

increased. The new wards are to have pitch pine floors in narrow widths, and the walls plastered in Parian cement. The wards are to be heated by Shorland's hospital stoves. The elevation to Roker-avenue is to be built in Sherburn bricks, relieved with stone dressings and terra-cotta ornamentations. The contractor for the work is Mr. J. B. Scott, of Monkwearmouth, and the architects are Messrs. W. and T. R. Milburn, of Sunderland.

NEW WING, CONVALESCENT HOME, HARROGATE.—A new wing has been added to the Heatherdene Convalescent Home, Harrogate. The addition has been erected to the south of the original building, and has been designed in harmony with the existing building. It consists of three stories; the lower floor opens out from the present building with an entrance from the grounds. This floor is devoted to a large day-room facing south-west, for the use of male patients; it measures 25 ft. by 17 ft., and is lighted by a large bay window. Adjoining the day-room is the dining-room, 26 ft. by 18 ft., lighted by three windows, and having a serving window opening direct from the kitchen. The kitchen is 26 ft. by 18 ft., with an open pitch-pine roof. In connexion with the kitchen are the scullery, housemaids' pantry, larder, &c. There is also on this floor a sitting-room for nurses. Opening from the corridor is a cloak-room with lavatories, &c. The first floor is devoted entirely to sleeping accommodation for male patients, one room facing south-west, 25 ft. by 17 ft. by 12 ft. high, for four beds, and another room facing south-east, 26 ft. by 18 ft. by 12 ft. high, for seven beds. There is also a small bedroom for emergencies, and bathroom, lavatory, with usual conveniences. The second floor has a room, 26 ft. by 18 ft., for seven beds, and a room for an attendant. There is also a room for servants, the latter entered only from the main building. This floor is fitted with the usual lavatory accommodation. The whole of the rooms are warmed by open fires, and are ventilated by the admission of cold air through Tobin tubes, and the extraction of the vitiated air by the aid of heated vertical shafts. The exterior is built entirely of local stone. The contractors for the whole of the works have been Messrs. Ives & Co., Shipley, and the building has been designed by and erected under the superintendence of Mr. John Eltringham, architect, Sunderland.

PROPOSED CONVENT NEAR EDINBURGH.—The plans for the convent at Liberton of the community of nuns known as the Poor Clares Colettines show a quadrangular building, three sides of which will provide accommodation for twenty-seven nuns, while a church will form the fourth side. Owing to want of funds, only the north wing is at present to be built. It will consist of a two-storied building, with a house for the chaplain at the west end. This wing is intended ultimately for the accommodation of members of the Third Order of St. Francis. At present, however, a small number of cloistered nuns are to occupy the upper story, and the others the lower floor. The wing will be about 150 ft. long and 36 ft. high, and until the church is built one of its rooms will be used for the celebration of mass and for other services. The plans for the church show that it is to include a choir, 35 ft. long by 25 ft. wide, for the cloistered nuns, divided from the portion set apart for the general public, which will be of similar dimensions. Inside the church the height will be 28 ft. Separate altars are to be provided for the two chapels. The public will gain admission by a porch at the north end, and at the south a bell turret is to have a place. Each end of the church will have a rose window. Craigmillar stone is to be used throughout the convent buildings for the walls, and Dunfermline stone for the dressings, while the roofs are to be of Count Velinhell slate of greenish tint. The style is Gothic, severely plain. The plans have been prepared by Mr. A. E. Purdie, London; the contractor for the work is Mr. John Lownie, Edinburgh; and the clerk of the works is Mr. F. Colbourn, London.

TRINITY PRESBYTERIAN CHURCH, NEWCASTLE.—A new Trinity Presbyterian Church has been erected in Northumberland-road, Newcastle. The new church was designed by Messrs. Marshall & Dick, architects, Newcastle, whose plans were selected in open competition. It is built, so far as the exterior walls are concerned, of stone from the quarries at Kenton and Windy Nook. From Northumberland-road entrance is gained to a vestibule, with two commodious cloak-rooms, and from the vestibule doors open to each aisle. To the right and left are doors connected with porches containing the staircases to the galleries, although access may be gained to these galleries direct from the street, without passing through the main entrance at all. A corridor at each side of the church allows of direct access to the transepts and the seats near the pulpit end. Entrance to the church can also be obtained from the hall entrance in the side street, as well as to the gallery. The organ-chamber is recessed on one side of the choir space. The galleries are so arranged that most of the seats are placed near the pulpit, the remainder of the gallery projecting only a little way over the side corridors. The extent of the accommodation in the church is as follows:—Ground floor, 595; gallery, 355; choir 50—a total of 1,000. A corridor separates the church from the hall. It gives immediate access to the church and hall on the ground floor, and contains a staircase leading to the galleries of both buildings, as well as to the vestries. Entrance to this corridor, and to the cloak-rooms adjoining, is placed at about the centre of the side street. The main entrance to the hall is near the low end of the side street. The hall is 62½ ft. long and 44½ ft. wide, and accommodates 528 people on the ground floor and eighty in the gallery; and there are thirteen class-rooms for 208 children. There is a smaller hall, to seat 200, opening direct from the larger hall. Caretakers' rooms are provided at the further end. The church and hall are warmed by means of hot water on the low-pressure system. The building has been erected, under the architect's supervision, by Mr. G. H. Mauchlen, of Newcastle. The slating has been done by Mr. Nicholson, the plumbing work by Mr. Herron, the ironfoundry work by Mr. Brown, the painting by Mr. Naish. Mr. M. Dodd has acted as clerk of the works. The pulpit of oak has been made by Messrs. Robson & Sons; the organ case, pipe decoration, and pulpit, having been designed by the architects. The pipes are decorated by Mr. Sykes. The whole of the church windows have been supplied by Mr. G. J. Baguley, of Newcastle.

## *SANITARY AND ENGINEERING NEWS.*

BRIDGE, GWEEBARRA, COUNTY DONEGAL.—An iron bridge over the Gweebarra estuary, at a point about three miles above its junction with the Atlantic Ocean, on the west coast of the county, is being erected. The Gweebarra estuary, which varies in breadth from 1,500 to 200 yards, extends for a length of ten miles in a north-east direction up to Doochary, and as there is no bridge across it the estuary completely severs the northern and southern divisions of this district. The bridge is constructed at a point where the estuary is 600 ft. in width at ordinary high water. It was found that the bed of the channel consisted of a deep deposit of very fine sand, liable to frequent changes from the action of storms and floods, and it was therefore decided to construct the bridge on screw piles, which have been driven to a depth varying from 14 ft. to 16 ft. into the sand. The bridge is built of steel, and consists of nine spans of lattice-work girders, eight of which are each 52 ft. in length, and one cantilever 26 ft. long. Each end of the bridge rests on solid masonry abutments. The intermediate supports consist of piers, each formed of clusters of eight solid steel piles with screw blades 3 ft. in diameter. The piles in each cluster are strongly braced, and the roadway, which is 16 ft. wide in the clear, is formed on Hobson's patent arched plates, and finished with a layer of broken stones, laid on concrete. Approaches have been formed in each side of the bridge, that on the north side 300 yards in length, and that on the south side 1,600 yards. The total cost of the bridge and the approaches will not exceed 8,000*l*. The work has been carried out by the Congested Districts Board, from the design and under the direction of Mr. S. Ussher Roberts, C.B., M.I.C.E., and under the immediate supervision of Mr. J. Golding, C.E. The contract for the ironwork was undertaken by the Phœnix Foundry Company, of Derby, and has been carried out by their representative, Mr. J. Burch. The contracts for the northern approach were undertaken by Mr. Edward Clarke, and that for the southern by Messrs. Doherty, both local firms.—*Irish Times*.

RESERVOIR, MORLEY.—The ceremony of cutting the first sod of a new service reservoir has just taken place at Morley. Previous to 1894 the borough obtained its water supply from the Leeds City Council, but the great cost, and the increased consumption during recent years, led the Morley Town Council to embark on a scheme of their own. Parliamentary powers were obtained in 1890, and in 1894 the waterworks were opened. The supply is derived from a reservoir at Withens Clough, near Mytholmroyd, which collects the water from the surrounding moors, twenty-one miles from the Town of Morley. That reservoir has a storage capacityof 330,000,000 gals., and is at an elevation of 960 ft. above sea level. From this reservoir the water is conveyed in iron pipes through thirteen towns and villages to Morley. The object of the new service reservoir is to intercept the water intended for the higher portions of the town, so that, should the supply from the storage reservoir be temporarily cut off, either by accident or with a view to effecting repairs, the town would not be without water. The service reservoir will also act as a settling-tank whenever the water obtained from the moors is turbid, and, if necessary, the supply from the storage reservoir can be cut off for a short period under such circumstances, and the town supplied with clean water from the service reservoir. This reservoir will be about 330 ft. long and 300 ft. wide, and will have a water surface of about 2¼ acres. The depth will be about 20 ft., and the capacity 10,000,000 gals., or more than sufficient for a week's supply. The basin will be constructed by excavating to a depth of about 7 ft., and constructing an embankment around the excavation of the material thus obtained. The bottom of the reservoir will be lined with clay puddle, and the core of the embankment will be formed of the same material, in order to render the basin watertight. The whole of the inside of the reservoir will be covered with a paving of stone. In adopting this method of construction the engineer, Mr. Charles Gott, M.Inst.C.E., of Bradford, has had in view the necessity for providing against any subsidence of the ground owing to the many coal workings in the neighbourhood.

THE POLLUTION OF THE RIVER LEA.—The latest analysis of water taken by the direction of the Hackney Vestry from the "apron" overflow of the Tottenham Sewage Works, and the old river at Temple Mills, shows in each instance considerable sewage contamination. Mr. Leo Taylor, F.I.C., the public analyst, says that the sample taken of the water running from the sewage works into the Lea contained a solid residue of 29·5 grains per gallon. The sample was yellow in tint and possessed an unpleasant odour. Mr. Taylor adds: "It is highly charged with organic matter, and should not be allowed to discharge into the River Lea." The sample taken at Temple Mills, the other extremity of the parish of Hackney, showed considerably greater pollution, the solid residue being 61·0 grains per gallon. "This water," says Mr. Taylor, "was distinctly yellow in tint, and possessed a decided sewage odour. It bore strong evidence of recent sewage contamination." These certificates have been forwarded to the Local Government Board for the information of their inspector, it is stated, who is about to make some investigation into the matter. The Sanitary Committee of the Vestry intend to ask the President of the Local Government Board to bring pressure to bear on the Lee Conservancy to make that body do its duty in the matter.

THE COWLYD WATER SCHEME.—The Cowlyd water scheme, which is to supply Conway and Colwyn Bay, may be regarded as practically completed, as the water has been turned on from the lake, which is embosomed in the mountains above Llanrwst. The engineer is Mr. T. B. Farrington, C.E., Conway, and the works, which have been executed at an approximate cost of 40,000*l*., have been carried out by Mr. T. Bugbird, contractor, Carnarvon. The pipe-line is seventeen miles. The Conway supply is carried over the river by a suspension bridge.

SEWAGE SCHEME, THURMASTON, LEICESTERSHIRE.—At the recent monthly meeting of the Thurmaston District Council the Clerk announced that the scheme for draining New Thurmaston had been laid before Mr. Simpson, of Messrs. Simpson and Harvey, surveyors, who had advised that the parishes of Birstall and Thurmaston should combine and provide a sewage scheme for their joint use. After some discussion, it was decided to wait and see what steps Birstall takes in the matter.

ARDSLEY SEWAGE WORKS (NEAR BARNSLEY).—On the 28th ult., the Chairman of the Ardsley Urban District Council attended at the newly completed Sewage Outfall Works and dedicated them to the benefit of the ratepayers and inhabitants of Ardsley. He was supported by most of the members of the Council, the medical officer (Dr. Townsley), the surveyor (Mr. T. Harper), and a number of other visitors. Mr. Theo. S. McCallum, of Manchester, the engineer of the scheme, presented the Chairman, Mr. E. W. Thirkell, with a gold key, in the names of the International Water and Sewage Purification Company (whose process has been adopted at the Ardsley Works) and of the contractors, Messrs. Turton Bros., and Messrs. Duncan and Jones, both of Stairfoot. In the first instance part of the sewage of the district was sent to a sewage farm, but the results were so indifferent that when it became necessary to make further provision for sewage purification for the remainder of this district the authority decided that whatever the treatment might be it should not be a sewage farm. They then adopted the "International" process, and retained Mr. McCallum to prepare and carry out the scheme, and they contemplate diverting the sewage from the sewage farm and bringing all down to the new works. The sewage on entering passes through a straining grid and detritus chamber; the grid is cleansed by a "Stott" revolving rake driven by a "Priestman" oil engine. The same engine drives a "Keirby" precipitant mixer. By means of this patented mixer, the incoming sewage receives a regulated supply of the precipitant (Ferozone) and during the passage of the ferozoned sewage along the baffling and contact chamber sufficient time is allowed for the precipitant to act upon the sewage, and form the coagulum or sludge ready for disposition in the precipitation tanks. These tanks are circular, two in number, and are fitted with the "Candy" patent automatic sludge removing apparatus. By this arrangement the tanks are continuous in operation, and the sludge is removed without emptying or interfering with the work of the tank. Clear as the tank effluent appears, it still contains organic matter in solution, and to convert this noxious matter into an innoxious form, free from liability to decomposition and offence, four "Polarite" filters are used.

## *FOREIGN.*

FRANCE.—The Municipality of Paris has made a new square behind the church of St. Laurent. It unites the Boulevard Magenta and the Rue du Faubourg St. Martin.——There is a talk of establishing the offices of the 1900 Exhibition Administration in the Emperor's old stables, on the Quai

d'Orsay, and of moving the Service de la Direction des Beaux Arts, which now occupies an aisle of the Palais Royal, close to the Rue de Valois, to the barracks in the Rue de Bellechasse.——On Sunday last a statue of the Chevalier Bayard was inaugurated in the Court of the Maison de la Légion d'Honneur, at Saint Denis. It is the work of M. Croisy, sculptor.——The pictures from the studio of Ribot, the painter, have been sold. They have realised the sum of 144,800 francs.——An exhibition of retrospective and modern art is to be inaugurated at Lisieux on July 1; it will remain open till August 31.——The statue of Jules Ferry, which is erected at Saint Dié, in the Place Thiers, is to be inaugurated on June 22.——The statue of the poet Theodore de Banville, which has just been inaugurated at Moulins, is the work of Henri Coulon, sculptor.——A competition has just been opened in the Département du Nord for the building of two prisons, one at Loos, near Lille, and the other at Douai. The expense of these two buildings is estimated at two millions of francs.——The spire of the Cathedral Sainte Bénigne at Dijon has just been inaugurated. It is the work of M. Charles Suisse, architect. It is 93 mètres high, higher than the spires on the transepts of Nôtre Dame, and on Amiens Cathedral.——The new civil hospital at Tunis is likely to be finished next January.——The death of M. Wendling, sculptor, is announced at Luzy (Meuse) at the age of 81 years. He had assisted in numerous important works—the restoration of the Salon Carré on the river façade of the Louvre, the Church of St. Vincent de Paul, the Churches of St. Thomas and St. Remi, at Reims; also the Hôtel de Ville and the Palais de Justice in that town.—— The painter Victor Ranvier has just died, after a long illness. He was born at Lyons in 1832. Among his important works are the ceiling of the large room at the "Legion of Honour" buildings, and the "Aurore et la Nuit," "Promethée" (now in the Lyons Museum), "L'Automne," "Bacchus et Ariadne," &c. At the time of his death he was at work on a figure of "Music," for one of the rooms at the Paris Hôtel de Ville.——Another artist whose death must be recorded is M. Pierre Lehoux, a pupil of Cabanel, who has died at the age of 52, just at the time when his work was at its best and promised more. His "Adam and Eve driven out of Paradise" was in the last year's Salon, and attracted a good deal of attention.——M. Barbet de Jouy, who has died at the age of 84, has been successively, at the Louvre, curator of the Museum of Antiquities, and of the Museum of Modern Sculpture. M. Barbet de Jouy in 1871 gave important assistance in preserving the Louvre from the injury threatened by the Commune.

NEW YORK.—There is much complaint around New York of lack of material for the great iron structures going up. Either the large mills have not appreciated the amount of building to be done this season, or their plants have not kept up with the growing use of iron and steel in building. At any rate the fact now faces builders, and is likely to cause serious delay in many buildings now under way. The trouble seems to be chiefly with the heavy steel beams. These are made at the large out-of-town mills, such as the Carnegie Works, Homestead, Paterson, or Johnstown, Pa. The large firms of this city, while manufacturing much of the light work, do not make these large beams. To supply the demand for their work they have been running night and day in some instances. Should this demand continue it will call into operation some large plants now closed down in anticipation of light demand.—*Architecture and Building.*

CANADA.—The past few years have witnessed a most decided and marked change in the class of dwellings erected in Canada. Many new and elegant buildings scattered throughout the country, particularly in Western Ontario, have been characterised by a better construction, a finer finish, and the exercise of greater care in regard to detail. Pine is rapidly giving place to black birch, cherry, ash, oak, and maple. It is quite a common sight now to see a pretentious farm-house faced with pressed bricks, having generous windows with plate glass, and with painted glass in hall windows, hardwood doors built up on a pine or basswood core, ornamental stairs and bandrailing, and alternate strips of dark birch and light maple floors. We notice these improvements in materials and good taste over old methods with a great deal of pride and satisfaction, for it denotes a measure of substantial prosperity that tells of the progress the whole country is making.—*Canadian Architect.*

## *MISCELLANEOUS.*

OPEN SPACES.—The Friends' burial-ground, about one-half acre in area, in Long-lane, Bermondsey, has been converted into a public recreation ground, under the auspices of the Metropolitan Public Gardens' Association, who contributed 150*l.* towards the cost of laying out the ground, and purchased the seats; Mr. Pomeroy, Chairman of the Vestry, defraying the cost of the fountain.——The House of Commons have read, for the third time, the Corporation's Cattle Markets Bill, Islington, whereby the Corporation will be enabled to dispose of several acres of surplus lands, one plot (twelve acres) of which it is proposed to convert into a people's park. The plot abuts on the south road of the market between York- and Caledonian-roads. The Bill provides for the purchase of the land by the London County Council and the Islington Vestry within six months from the passing thereof.

WESTBOURNE-GROVE.—In the course of this month will be offered for sale by auction No. 118, Westbourne-grove. The house has no notable features of its own, yet possesses some extrinsic interest as having formed during several years the London home of the late Prince Lucien Buonaparte, the great collector of books illustrative of linguistic literature, to the study of which his whole life was devoted.

ELECTRIC TRACTION COMPANY.—In the report of the Directors of the Electric Traction Company, Limited, which was to have been read at the first ordinary general meeting of the Company yesterday (Friday), it is stated that the whole of the share capital has been subscribed. The Deferred shares are fully paid, and 2*l.* per share has been paid on the Ordinary shares. On June 18, 1895, the Company entered into a contract with the Central London Railway Company for the acquisition of the necessary land and the construction and equipment of the railway with all its appurtenances to the satisfaction of the Railway Company's engineers. The line from Shepherd's Bush to the Bank has been divided into six sections, and on February 19 last a selected number of firms, all of whom were approved by the engineers to the Railway Company, were invited to tender for the construction of the tunnels and shafts and incidental work in respect of these six sections. A considerable number of tenders having been received, the directors have entered into the following sub-contracts:—Sections 1, 2, and 3, Shepherd's Bush to Marble Arch, Mr. J. Price; sections 4 and 5, Marble Arch to Post Office, Messrs. Walter Scott & Co.; section 6, Post Office to Bank, Mr. G. Talbot. The arrangements with regard to the station at Liverpool-street are progressing satisfactorily.

MIDLAND INSTITUTE, ARCHÆOLOGICAL SECTION.—The series of summer excursions made by the Archæological Section of the Midland Institute was inaugurated on the 30th ult., when a visit was made to the Avon district between Pershore and Tewkesbury. Pershore Abbey was visited. The abbey occupies the site of an older monastery, founded in A.D. 689, and built during the latter part of the eleventh and early part of the twelfth century. The greater part of this structure was destroyed by fire, and was replaced in the middle of the thirteenth century by the edifice of which the present building formed the chancel and south transept. The nave fell before the hand of the destroyer and was sold for building materials at the time of the dissolution of the monasteries, and a century later the north transept fell down, the support which it had given to the cetral tower being then supplied by massive stone buttresses. The marks of juncture with the demolished portions of the building, and the remains of the chapel of the Sacred Relics, were examined with much interest, and the party then entered the church, where Mr. F. B. Andrews exhibited a collection of carefully prepared drawings of the original church, as far as its arrangement can now be discovered. The south transept and the lower part of the tower are all that remains of the Norman work, portions of the south end of the transept being so rude as to be believed by some to be part of the original Saxon structure. The choir is of the thirteenth century, with the exception of the roof, which is a century later. After the visit to the Abbey the party were entertained to tea by Mr. William Pearce, at his interesting old house, an excellent specimen of early Georgian architecture; and here also were seen some tracings of the frescoes at Pinvin Church. The party then drove past the half-timbered cottages of Wick, through orchards and hop-gardens, to the picturesque village of Cropthorne, charmingly situated on the banks of the Avon, where they were met at the church by the Rev. H. Wilkinson. The church is of Norman date, with fine carved-oak benches of the fifteenth century, and two good Jacobean monuments. A large stone cross of the twelfth century, incised round the edges with Greek fret, was found in the walls during recent alterations made to the church. A pleasant walk of about a mile led to Fladbury, where a visit was paid to the church, which also dates from the twelfth century, and bears remarkable correspondence with the church at Cropthorne. The sanctus bell at this church is one of the very few in Worcestershire bearing an inscription, the date of the inscription being 1557. Fladbury station was left at half-past eight, and Birmingham was reached at 10.25.—*Birmingham Gazette.*

MINIATURES AT THE LOUVRE.—It is announced that the museum of the Louvre has received, as a bequest from the owner, a very curious collection of miniatures, once the property of the Duc de Berri, brother of Charles V., and a great connoisseur and collector.

DISCOVERY OF A SUBTERRANEAN PASSAGE IN SHEFFIELD.—A few days ago, according to the Sheffield *Independent*, in the course of excavations in connexion with the building operations at Messrs. T. B. & W. Cockayne's, a subterranean passage was opened. At first it was believed to be a sewer, but investigation cast considerable doubt upon the theory, and the city authorities determined to have the passage thoroughly explored, so that its character and purpose may, if possible, be definitely ascertained. Its capacity exceeds that of most modern sewers, while the circumstance that it has been driven through the rock suggests the probability that it has been fashioned for some specific object not connected with purposes of public health. Sewers are modern institutions in Sheffield. Half a century ago most of the sewers were gutters running along the surface of the roads, and thus found their way to the river in the most convenient and superficial manner. Although it is not unusual for sewers to be driven through the solid rock in Sheffield, as is the case in High-street and Fargate, circumstances scarcely point to a sewer of this character being driven underneath a thoroughfare like Hartshead, which has never been a main artery of the city. Besides, there would be no need for a sewer in this locality. It is well known that in the early days methods of escape were generally constructed by those who built Norman castles, the outlet leading either in the direction of the sanctuary or to some secluded spot where the owners could take refuge in case of dire necessity. An impression generally prevails that Sheffield is of comparatively modern origin. This is not the case. It is certain that the city has a very interesting early history, known only now to a few students of antiquarian matter. Two castles are known to have been erected in Sheffield, the last, in 1200, being built on the site of the previous one. The subterranean passage has been explored from the point where it was broken into as far as the Parish Church. In the other direction its exploration is limited owing to the fact that at a short distance from the opening a wall was found. This wall will be taken down by the men who have charge of the exploration, and probably the passage will be found to lead to the vicinity of the castle or the banks of the Don. It is anticipated that the passage will be found to communicate with either the castle or the manor.

## *CAPITAL AND LABOUR.*

STRIKE IN THE PORTSMOUTH BUILDING TRADE.—The strike of the joiners and painters at Portsmouth for an extra halfpenny per hour has entered upon its sixth week, and there is no immediate prospect of a settlement. Large numbers of men have left the town, having obtained employment elsewhere.

NOTTINGHAM BUILDERS' LABOURERS.—Several delegates to the Amalgamated Builders' Labourers' Union of Great Britain and Ireland attended at the annual conference in Nottingham, at the Assembly Rooms, Low-pavement. An invitation to the meeting was extended to members of the various branches of the building trade. Mr. John Judge (Leeds) presided. He said that the object of the meeting was to ask the bricklayers and the labourers to become federated, and both go in at once for an advance of wages. It was essential that the two orders should support each other in all cases. The average earnings of the labourer were from 16*s.* 6*d.* to 17*s.* per week, and that was not sufficient to maintain a wife and family.—Mr. Flannagan (Hull) moved a resolution to the effect that all labourers employed in the building trades should at once join that union. The resolution also supported the abolition of sub-contracting, and reference was made to the advantages provided for members. In moving the resolution Mr. Flannagan said as their combination extended so would the conditions of work be improved, and it was a well-known fact to any labourer who had given thought and attention to the matter that where the men employed in the building trade or any other industry were unorganised there also were the worst conditions of employment. The speaker then referred to that part of the resolution which stated that the union would provide legal assistance to gain compensation for members injured in following their employment. With regard to sub-contracting there was no one, he supposed, suffered so much under that system as the builders' labourers, and it was of great importance to them that it should be put an end to as speedily as possible, so that they would not have to work for a profit for a middleman. The speaker also referred to other advantages which he said were provided by the union.—Mr. Stevens (Leicester), in seconding the resolution, said he knew no place where there had been more sub-contracting than in Leicester, and he could tell them it was the labourers who had to suffer, for although the sub-contractor would pay the price he would manage with two labourers instead of three.—Mr. Gorman (Leeds) supported the resolution.—Mr. Belt (Hull) also supported the resolution. He denied the assertion which, he said, was made that the builders' labourer was an unskilled workman, and having enlarged upon this point he enforced the need for great attention to be paid to the matter of organisation, so that they could get the same conditions as obtained by other branches of the building trade. He said it was only by united action that they would be able to get wages that would enable them to live as they ought to. If the builders' labourers had a strong national organisation they would be in a position to prevent any bricklayers or masons in any town blacklegging

their members.—Mr. Riley (Nottingham Slaters' Society) supported the resolution, which was carried unanimously.

## *LEGAL.*

### IMPORTANT DILAPIDATION CASE AT HORSHAM.

A DILAPIDATION case, involving some points of more than usual interest, came recently before Mr. Philip E. Pilditch, architect and surveyor, of 17, Parliament-street, Whitehall, sitting as Umpire at the King's Head Hotel, Horsham (the property in respect of which the case arose). Mr. E. Shortt, instructed by Messrs. Adams & Hugonin, was counsel for Mr. Groom, the plaintiff, and Mr. Muier, instructed by Mr. Cotching, was counsel for Mr. Naldrett, defendant. Mr. F. H. King was surveyor for the plaintiff, and Mr. Aldridge was for the defendant.

From the opening statements of counsel it appeared that the defendant originally held the premises on lease, on the expiration of which he took a new lease for seven years, determinable by the freeholder at three months' notice. After the creation of the new tenancy the freeholder sold his reversion to the plaintiff, and vacant possession being required, served the lessee, the defendant, with notice to quit, which notice expired on the day fixed for the completion of the purchase, and when only seven months of the term had run.

The repairing covenants in the lease were as follows: "At all times during the said term to keep the said premises in good and sufficient condition and repair, and deliver up to the lessor at the expiration or sooner determination of the said term." And there was a specific covenant for painting outside in the third and last years of the term and inside in the last year, and at the same time with every outside painting to restore and make good the outside stucco work, and with every inside painting, to grain, paper, whitewash, and colour the parts usually so treated internally.

Plaintiff's counsel maintained that the basis of assessment should be that laid down in the case of Proudfoot *v.* Hart, and urged that the application of that rule to the present case would suggest that the defendant was liable for putting the premises in such a state of repair as to make them fit for a reasonably minded hotel-keeper of high-class standing.

Counsel for defendant pointed out that the specific painting covenant never came into force at all, the lease having been determined when it had only been in existence seven months, and that the other repairs referred to in the specific covenants were on the same footing. That the premises had been put in repair by the lessee under the former lease at a cost of about 300*l.*; 581*l.* had been mentioned as the present claim, and this was for a tenancy only extending over seven months. That the lease was determined two days before the conveyance to the purchaser, therefore the purchaser never became assignee of the reversion. Counsel then went on to quote various cases, and urged that the state and general condition of the premises at the commencement of the term should be taken into account, and, in fact, it was only those dilapidations that had accrued during the seven months' tenancy which the plaintiff was entitled to recover; that his client was not liable for decorative repair, because the specific covenants providing for that had never come into force; and that, in fact, their presence lessened the lessee's liability for such work under the general covenants.

Counsel for the plaintiff pointed out that the matter, having been submitted to arbitration, defendant was estopped from denying the plaintiff's title under the lease. As regards the defendant only being liable for the dilapidations accrued during the seven months he was in possession the question was, what was necessary to be done to put the premises in repair now? If the premises were not in repair at the commencement of the term, it was his duty to put them in repair as well as keep them in that condition. The reasonably-minded tenant referred to in the decisions quoted was a new tenant. As to the repairs to be done with the specific paintings, he submitted that the intention of the covenant was not to limit that work to those periods only, but merely to fix those periods as a convenient time for such works.

Mr. Pilditch has now made and published his award in the case. He awards the plaintiff 245*l.* 5s., and directs each side to pay their own costs and share the expenses of the Reference.

The case contains a good deal of matter for reflection, which will doubtless be interesting to those who are engaged in dilapidation practice.

### ANCIENT LIGHTS AT CLERKENWELL WORKHOUSE.

IN the Chancery Division of the High Court of Justice on Tuesday, Mr. Justice Stirling had before him the case of Underhay *v.* Quinn. It was a motion by the plaintiff for an injunction to restrain the defendant from interfering with the plaintiff's lights.

Mr. Graham Hastings, Q.C., appeared for the plaintiff; and Mr. Percy Wheeler for the defendant.

Mr. Graham Hastings said he understood that the defendant was willing to give an undertaking in terms of the notice of motion, except so far as regarded a mandatory order, that was to say, to refrain from erecting in Clerkenwell Workhouse any building so as to darken, injure or obstruct the ancient lights of the plaintiff's passage.

Mr. Wheeler assented, but asked his lordship to reserve the costs of the motion till the trial, when, he said, he should be able to show that the motion was unnecessary.

Mr. Graham Hastings objected to any reservation of costs. His friend must give the undertaking unreservedly or he must pursue the motion. The defendant, too, had three weeks, and had not filed a line of evidence.

Mr. Wheeler persisted that his willingness to give the undertaking, reserving the costs, was sufficient. His client had not the smallest intention of infringing the plaintiff's lights.

His lordship accepted the defendant's undertaking, and made the costs of the motion the costs in the action.

## MEETINGS.

SATURDAY, JUNE 6.

*Edinburgh Architectural Association.*—Visit to Falkland Palace.

MONDAY, JUNE 8.

*Royal Institute of British Architects.* — Fifteenth General Meeting (Business):—(1) To receive the report of the Scrutineers appointed by the Annual General Meeting to direct the election of the Council, Standing Committees, &c., for the year of office 1896-97; (2) To proceed with the election of candidates for membership under by-laws 7, 8, and 9. 8 p.m.

THURSDAY, JUNE 11.

*Society of Antiquaries.*—8.30 p.m.

SATURDAY, JUNE 13.

*Incorporated Association of Municipal and County Engineers.*—Midland Counties' District meeting at Hanley.

*Northern Architectural Association.*—Annual Excursion, Haggerston Castle, Holy Island, &c.

## RECENT PATENTS:

### ABSTRACTS OF SPECIFICATIONS.

7,753.—WATER CLOSET APPARATUS: *T. G. Rhodes and Others.*—This invention has for its objects:—1. An arrangement for effecting water-closet flushing automatically, as follows:—In connection with the closet is arranged a series of levers and balance weights, connected with a foot-board, so that if the person using the closet sits down on the seat or stands on the foot-board, the flushing of the closet cannot be effected; but on leaving the said foot-board, by means of the said lever and balance-weight, the flushing apparatus is brought into action; and (2) an alternate arrangement consists of placing an air cylinder in connexion with the flushing apparatus, which may be made to flush the closet some time after the party has left the seat.

10,479.—WINDOW-SASH FASTENERS: *J. Holt.*—This invention consists of two plates, one to be screwed to each sash, one of which has a stud with head secured in centre, and the other has an eccentric capable of being revolved by the thumb and finger as an ordinary thumb-screw. In order to fasten the window the patentee uses a loose arm or plate drilled at one end to receive the eccentric and with a hook formed at the other end to slip under the head of the stud. When the arm is moved over the sash in the operation of fastening the window and hooked on to the stud the eccentric is partially revolved, and thus draws the sashes together tightly.

11,563.—READY REMOVAL OF WINDOW SASHES: *C. L. F. Wippling.*—Patentee makes one side bead detachable (both if preferred), providing it with suitable devices of the screw or bolt type for holding it in position. End of the sash-line is made fast to sash at a point lower than centre line of latter by being passed through a hole in a metal plate and a washer and knotted, the plate being recessed into the sash. This plate may be made to be slid into position along a double V groove. Any suitable automatic catch may be provided to hold the plate in position.

11,656.—DOOR AND OTHER KNOBS, CUPBOARD TURNS, &c.: *J. J. Sumner.*—Patentee forms neck of knob straight, or nearly so, and without any mount. The rose is passed into the neck, said rose, when of metal, is stamped out of one piece with a collar or rim having an inner flange or rim encircling same. A metallic cap, with tubular piece attached, is now placed on the end of the knob, the tubular piece being firmly embedded in the neck and attached within same by lead or other suitable means. The sides of this metal cap fit over and bear on the inner rim of the rose, and thus prevent the knob coming off. In cupboard turns patentee forms neck perfectly straight, and attaches spindle thereto by means of leading, &c., without the necessity of any mounting of the knob or spindle end.

4,695.—FIREPLACES: *M. Landmann.*—Consists in a fireplace in which the draught is compelled to come into contact with a large surface of the fuel by the employment of a fire-basket provided with holes or slits, together with a flat grate and a hermetically fitting ring, for the purpose of best utilising fuel and obviating smoke.

### NEW APPLICATIONS FOR LETTERS PATENT.

MAY 18.—10,629, F. Lynde, Lavatory Basins, Baths, &c.—10,637, J. Mearns, Screw-neck Gulley for House Drains.—10,675, C. Phillips, Blow-lamps for Burning off Paint, Gasfitter's Soldering, and Brazing-work.—10,686, J. Lohmeyer, Combined Set-square and Ruler.

MAY 19.—10,737, W. Preston, Automatic Disinfector for Water-closets.—10,786, A. Bray, Window-sash Fasteners.—10,815, La Roy Freese Griffin, Substance for Making Building Blocks, Slabs, &c.—10,834, R. Schaellibaum, Securing Window Glasses or Panes in Sashes.—10,841, H. Schneider, Manufacture of Paving Material and Slabs.—10,845, W. Thompson, Plaster Support or Lathing for the Corners of Walls, Partitions, or Ceilings, for affording a perfect foundation and key for the plastering, permitting of a symmetrical finish, and for other purposes.

MAY 21.—10,909, R. Aspden and J. Haworth, Chimney Tops, or Ventilating Terminals.—10,922, H. & C. Stuart, Door Silencer.—10,975, R. Swales, Flushing Water-closet Tanks.—11,012, J. Phillips, Doors.—11,020, H. Plunkett, Windows.

MAY 22.—11,113, J. Smithies, Joining pliable hollowed high relief materials used for decoration of walls, ceilings, panels, &c.—11,119, J. Jones, Presses for bricks, tiles, &c.—11,168, 11,169, and 11,170, the Iron Ring Inventors' Syndicate and H. Johnson, Apparatus for automatically discharging disinfectant fluids into the Water in Cisterns, from which Water-closets, Urinals, &c., are flushed.—11,182, W. Thompson, Preparing or Treating Wood.—11,203, A. Hocking, Waste or Slop Water-closets.

MAY 23.—11,236, S. Allin, System of Sewer Ventilation and of Utilisation of Town Refuse.—11,302, A. Whittaker, Drains and Sewers and Pipes therefor.

### PROVISIONAL SPECIFICATIONS ACCEPTED.

6,696, J. Walthew, Automatic Self-fastening for Door-handles.—8,281, S. Pollak and N. Zwilinger, Insulating Bricks, &c.—8,247, H. Piquet and A. Griffith, Constructing and Laying Coverings for Roofs and Walls of Houses or other Buildings in Sheet-metal or other suitable substances.—8,455, W. Pilkington, Jointing Drain and Sewer-pipes.—8,532, S. Holman, Apparatus for use in creating Current of Air or Gases, more especially the Ventilation of Sewers.—8,653, F. Golby, Closets.—8,746, A. Line, Sash-fasteners.—9,073, H. Macaulay, Sliding Windows.—9,104, W. Nicholson, Sliding and Swinging Window-sashes.—9,195, J. Newbould, Fastenings and Attachments for Door-knobs and like handles.—9,281, C. Copeland, "Trial Pieces" and Shrinkage or "Trial Gauges" for use in ascertaining the temperature of Ovens or Kilns in which Pottery-bricks or the like ware is fired.—9,814, C. Wicke, Roofing Tiles or slabs.

### COMPLETE SPECIFICATIONS ACCEPTED.

*Open to opposition for two months.*

3,962, H. Lake, Machines for Sharpening and Setting Saws.—6,556, J. Mackenzie, Sash or Window-fittings.—8,267, E. Barnsley, Varnish.

## SOME RECENT SALES OF PROPERTY:

### ESTATE EXCHANGE REPORT.

May 14.—BY TOOTELL & SONS (at Maidstone).

| | |
|---|---|
| Meopham, Kent.—The "Amazon and Tiger" beer-house, and house, shop, and premises adjoining, f., r. 25*l.* | £1,000 |

By DACRE & SON (at Pateley Bridge).

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|---|---|
| Pateley Bridge, Yorkshire.—Enclosures of moor-land, 20a. 3r. 3p., f. | 290 |

By W. COLLINS & KEMP (at Birmingham).

| | |
|---|---|
| Solihull, Warwick.—"Brook Farm," 29a. 1r. 6p., f. | 1,775 |
| "Green Farm," 30a. 1r. 25p., f. | 1,775 |
| "Solihull Lodge" and 12a. 1r. 16p., f. | 805 |
| Knowle, Warwick.—Freehold residence and 11a. 0r. 9p. | 600 |
| Hampton-in-Arden.—Two copyhold cottages and 5a. 2r. 10p. | 350 |

By DOBSON & SON (at Bradford).

| | |
|---|---|
| Eccleshill, Yorkshire.—"Albert House" and 2a. 2r. 11p., f. | 900 |

By PENDERED & SON (at Oundle).

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|---|---|
| Winwick, Northants.—Four enclosures of land, 19a. 1r. 20p., f. | 275 |

By W. G. WOOD (at Aldershot).

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|---|---|
| Farnborough, Hants.—1, The Poplars, f., r. 35*l.* | 725 |

May 15.—By GRANT, WHIELDON, & CO.

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|---|---|
| Whitechapel.—90, Whitechapel High-st., c., r. 177*l.* | 3,500 |

By C. & H. WHITE.

| | |
|---|---|
| Walworth.—83, Mann-st., u.t. 55¾ yrs., g.r. 4*l.* 5s. | 340 |
| Bermondsey.—59, Upper Grange-rd., f., r. 36*l.* 8s. | 445 |

By BAKER & SONS.

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|---|---|
| Ealing.—13, Uxbridge-rd., u.t. 68 yrs., g.r. 20*l.*, e.r. 90*l.* | 550 |

By H. C. NEWSON.

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|---|---|
| Maidenhead, Berks.—"Somerlea" and 6¼ acres, f. | 5,750 |

By HUMBERT, SON, & FLINT.

| | |
|---|---|
| Watford, Herts.—"Calliper's Hall" and 45a. 2r. 27p., f. | 4,750 |
| "West Calliper's Farm," 14a. 1r. 5p., f. | 800 |
| Two enclosures of land, 7a. 0r. 27p., f. | 240 |
| King's Langley, Herts.—An enclosure of land, 4a. 1r. 8p., f. | 177 |

By THOMPSON, RIPPON, & CO. (at Exeter).

| | |
|---|---|
| Coombeinteignhead, Devon.—"The Middle Rocombe Estate," 163a. 2r. 32p., f. (including machinery and timber) | 4,900 |

By W. B. HILL (at Southampton).

| | |
|---|---|
| Cadnam, Hants.—"Paulsoms" and 11¾ acres, f. | 860 |
| "Cherry Cottage" and ¾ of an acre, f. | 255 |

May 16.—By FRY & ASPREY (at Bath).

| | |
|---|---|
| West Littleton, Glos.—Enclosures of land, 30a. 1r. 24p., f. | 250 |

By CHURTON, ELPHICK, & CO. (at Chester).

| | |
|---|---|
| Boughton, Cheshire.—32, Tarvin-rd. and a plot of land, f. | 505 |
| Tarvin, Cheshire.—Freehold farmhouse and 2a. 1r. 14p. | 400 |
| Enclosures of land, 73a. 3r. 4p., f. | 3,890 |

May 18.—By WEATHERALL & GREEN.

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|---|---|
| City of London.—186, Upper Thames-st., f., r. 70*l.* | 1,800 |
| Lincoln's Inn.—10, Portsmouth-st., f., r. 42*l.* | 1,025 |
| Spitalfields.—Dorset-st., "The Blue Coat Boy" public-house, f., r. 55*l.* | 2,000 |
| 28, 29, and 31, Dorset-st., f., r. 74*l.* | 1,150 |
| Deptford.—High-st., "The Prince Regent" public-house, f., r. 80*l.* | 2,810 |
| Holborn.—2, Little Turnstile, f., r. 36*l.* | 1,010 |

By FULLER, MOON, & FULLER.

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|---|---|
| Caterham, &c., Surrey.—"New Barn Farm" and piece of land adjoining, 157a. 0r. 5p., f. | 5,400 |
| "The Welcomes Estate," 138a. 1r. 8p., f. | 11,450 |
| 1 and 2, Welcome Villas, f., e.r. 65*l.* | 510 |
| 1 to 4, Marden Villas, f., e.r. 130*l.* | 1,465 |

By FRANCIS DOD & CO

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|---|---|
| Stoke Newington.—102, Evering-road, u.t. 77 yrs., g.r. £8, e.r. 50*l.* | 460 |

By JENKINS & SONS.

| | |
|---|---|
| Brockley.—21, 23 and 27, Manor-rd., u.t. 66 yrs., g.r. 17*l.*, r. 112*l.* | 1,085 |

By ALFRED RICHARDS.

| | |
|---|---|
| Holloway.—166 and 168, Holloway-rd., u.t. 24 yrs., g.r. 133*l.* 5s. | 400 |
| Islington.—44, Roman-rd., u.t. 64½ yrs., g.r. 7*l.* 10s., r. 40*l.* | 310 |

# CONTRACTS AND PUBLIC APPOINTMENTS.

## CONTRACTS.

| Nature of Work or Materials. | By whom Required. | Forms of Tender, &c. Supplied by | Tenders to be delivered. |
|---|---|---|---|
| *Granite Channelling and Kerbing .... | Beckenham U.D.C. .. | J. A. Angell, Council Offices | June 8 |
| Viaduct, Ham Green, near Bickleigh, Devon ..... | G. W. R. Co. ..... | Secretary, Paddington Station, W. ..... | June 9 |
| Waterworks..... | Melrose (N.B.) Comrs. | Belfrage & Carnfrae, C.E. 1, Erskine-place, Edinburgh ..... | do. |
| Cast-iron Pipes, &c. ..... | do. | do. | do. |
| Nine Houses, Allerton, Yorks..... | ..... | G. C. Gamble, Archt. Market-street, Bradford .... | do. |
| Twenty-one Houses, New Brompton, Kent..... | ..... | E. J. Hammond, Archt. New Brompton ..... | do. |
| Parochial House, &c. Kinlough, co. Leitrim ..... | ..... | C. Flynn, Kinlough, Bundoran, Ireland ..... | June 10 |
| Thirty-three Houses, Greengates, Eccleafield, Yorks ..... | ..... | Kendall & Bakes, Archt. Calverley-chambrs. Leeds | do. |
| School, Preston-street..... | Edinburgh Sch. Bd... | R. Wilson, Archt. 3, Queen-street ..... | do. |
| Weaving Shed, &c. ..... | Darwen Corporation.. | J. L. Fox, Archt. Bond-street, Dewsbury..... | do. |
| Alterations to Dispensary, Exeter.... | Committee ..... | J. Crocker, Archt. Queen-street ..... | do. |
| Enlargement of School, St. Paul's-street ..... | Aberdeen Sch. Board | D. & J. R. M'Millan, Archt 211, Union-street..... | do. |
| Additions to School, Skene-square.... | do. | T. Hector, Clerk, 31, King-street ..... | do. |
| Road Works ..... | Chichester Corp..... | City Surveyor ..... | June 11 |
| Two Houses, Earlsheaton, Yorks .... | ..... | Holtom & Fox, Archt. Westgate, Dewsbury .... | June 12 |
| Pair Villas, Rainsford End, Chelmsford ..... | ..... | F. Whitmore, Archt. 17, Duke-street ..... | June 13 |
| Fourteen Houses, Middle Dean-street, Halifax .. ..... | ..... | C. E. L. Horsfall & Son, Archt. Lord-st. Chambrs | do. |
| Villa, Stanton-road, Ilkeston ..... | ..... | G. Haslam & Son, Euclid House ..... | do. |
| *Painting and Whitewashing..... | War Department .... | R.E. Office, Mill-lane, Woolwich ..... | June 14 |
| *Painting, &c. ..... | LondonCountyCouncil | Archt's Dept. Spring-garden's, S.W..... | June 15 |
| Additions to School, Loscoe, near Normanton ..... | ..... | C. A. Phillips, Clerk, Castleford ..... | do. |
| Forming and Paving, Fylde-street, Kirkham, Lancs ..... | ..... | R. Cross, Auctioneer, Kirkham..... | do. |
| Four Shops, Queen-street, Cardiff .... | A. T. Stephens ..... | W. H. D. Caple, Archt. 1, St. John's-square..... | June 16 |
| Four Shops, Queen-street, Cardiff.... | Dr. D. E. Jones ..... | do. | do. |
| Road Materials ..... | Belper R.D.C. ..... | R. C. Cordon, Surv. Duffield Derby ..... | do. |
| Retaining Walls, &c. Milburn-place, North Shields ..... | Tynemouth Corp. .... | J. F. Smillie, Boro' Surv. | do. |
| *Portland Cement ..... | Borough of Brighton.. | F. J. C. May, Town Hall.. | do. |
| *Construction of Boundary Walls .... | do. | do. | do. |
| *Broken Granite..... | Acton U.D.C. ..... | D. J. Ebbetts, 242, High-street, Acton..... ..... | do. |
| *Five Water Vans ..... | Lewisham Bd. of W. | Surv. Dept. Board of Wks. Office ..... | do. |
| *Road Materials ..... | do. | do. | do. |

## CONTRACTS—*Continued.*

| Nature of Work or Materials. | By whom Required. | Forms of Tender, &c. Supplied by | Tenders to be delivered. |
|---|---|---|---|
| Road Materials ..... ..... | East Retford R.D.C... | T. Henry, Surv. Ranskill, Bawtree ..... | June 13 |
| Sewerage Works ..... | Knaresborough U.D.C. | D. Balfour, C.E. 3, St. Nicholas-bldgs. Newcastle-on-Tyne .. ..... | do. |
| Additions to St. Mary's Schools, Barrow..... .. .... | ..... | Rev. E. Caffrey, The Presbytery, Duke-street .... | do. |
| Bridge Works..... | Downham Market (Norfolk) R.D.C. .... | T. L. Reed, Clerk, Downham Market ..... ... | June 19 |
| *Sewers, &c. ..... ..... | Frimley U.D.C. ..... | W. J. Hodgson, High-st. Camberley .. | June 20 |
| *Sewerage and Electric Lighting ..... | Monmouth T.C. ..... | Branwell & Harris, 5, Gt. George-st ect..... | June 22 |
| *Sewers, Pipes, &c..... | Southend-on-Sea Corp. | J. Mansergh, 5, Victoria-street, Westminster .... | June 22 |
| *Gas Meter Testing Station..... .... | LondonCountyCouncil | Archt's Dept. Spring-gardens, S.W. ..... | do. |
| *Painting, &c. ..... ..... | Paddington Guardians | E. H. Sim, 8, Craigs-court, Charing Cross, W.C. .... | do. |
| Sewerage Works..... | Cheltenham Corp. ... | Borough Surveyor ..... | do. |
| *Granite ..... ..... | North Walsham U.D.C. | The Surv. Council Offices .. | June 24 |
| Stabling for 30 Horses..... | Halifax Corp. ..... | T. L. Patchett, Archt. George-street Chambers.. | do. |
| *Four Shops, Bromley, Kent ..... | ..... | F. & W. Stocker, 90 & 91, Queen-street, E.C. ..... | do. |
| *Alterations, St. Anne's Home ..... | St. Pancras Guardians | A. A. Millward, Vestry Hall, Pancras-road .... | June 25 |
| *Extension of Electric Lighting Station | Vestry of St. John's, Hampstead ..... | Clerk, Vestry Hall, Haverstock-hill, Hampstead .. | do. |
| *Refuse Destructor..... | Ramsgate T.C. ..... | Town Clerk ..... | June 28 |
| Sewers ..... ..... | Worcester T.C. ... | City Engineer, Guildhall.. | June 30 |
| Rectory House, Enniskillen ..... | Rev. Canon Ovendon.. | T. Elliott, Archt. Enniskillen ..... ..... | July 1 |
| High Chimney, Aqueduct-street..... | Burnley Corp. ..... | G. H. Pickles, Boro' Surv. | No date |
| Destructor Shed, Offices, &c. ..... .... | do. | do. | do. |
| House and Shop, Old Trimdon, Durham ..... ..... ..... | R. W. Parker ..... | J. T. Brown, Old Trimdon, Trimdon Grange, R.S.O. | do. |
| Six Cottages, Dunston-on-Tyne .... | ..... | G. Bain, Archt. Ravensworth .. .... ..... | do. |
| Additions to Gospel Hall, Colchester | ..... | C. E. Butcher, Archt. 3, Queen-street ..... | do. |

## PUBLIC APPOINTMENTS.

| Nature of Appointment. | By whom Advertised. | Salary. | Applications to be in |
|---|---|---|---|
| *Inspector of Works ..... | Plymouth Corp..... | 130*l.* rising to 150*l.* per annum..... ... .. | June 13 |
| *County Surveyor ..... | West Sussex C.C. .... | 240*l.* per annum and expenses ..... | June 24 |

***Those marked with an asterisk (*) are advertised in this Number.*** ***Contracts*, pp. iv., vi., viii., & xix.** ***Public Appointments*, p. xvi.**

Tottenham.—4, Pembroke-rd., f. ..... £430
Teddington.—Broom-rd., "The Cottage," f., r. 55*l.* 700

By MULLETT, BOOKER & CO.

St. John's Wood.—53, Hamilton-ter., u.t. 42½ yrs., g.r. 18*l.* 4s., r. 130*l.* ..... 2,200
Portman-sq.—5, Gloucester-st., u.t., 27 yrs., g.r. 80*l.* ..... 780
Hammersmith.—125, Shepherd's Bush-rd., u.t. 81½ yrs., g.r. 14*l.*, r. 45 ..... 290

By A. H. TURNER & CO.

Headley Heath, Surrey.—"Heath House" and about 7 acres, f. ..... 3,800

By DOWSETT, KNIGHT & CO.

Wimbledon.—Norman-rd., f.g.r. of 12*l.*, reversion in 70 yrs. ..... 390
Tottenham.—North Grove-villas, f.g.r. of 20*l.*, reversion in 65 yrs. ..... 540
Minster, Kent.—"Abbey Gate Farm," 228 a. 1 r. 1 p., f. ..... 4,900

By W. HOUGHTON.

Walthamstow.—1, 2, and 3, West-av., f., r. 82*l.* ... 1,450
177, Higham-hill-rd., f., r. 18*l.* 4s. ..... 200
Wood-st., a building estate, 3¾ a., f. ..... 1,875
Hale End, "Jack's Farm," 52 a. 1 r. 25 p., f. ... 6,600

By W. WHITELEY.

Upton Pk.—16, Victoria-av., u.t. 90 yrs., g.r. 5*l.* ... 270

By HAMPTON & SONS.

Hadley Common, Middlesex.—"Hadley Hurst," and 36 a. 3 r. 30 p., f. ..... 10,500
Eastbourne.—Grange-rd., "Elling Lodge," f. ..... 2,450

By DEBENHAM, TEWSON, & CO.

Notting Hill.—19, Lansdowne-rd., f., r. 100*l.* ..... 1,400
46, 49, and 61, Clarendon-rd., f., r. 220*l.* ..... 2,960
1 and 2, Clarendon-pl., f., r. 70*l.* ..... 890
50 and 52, Portland-rd., f., r. 84*l.* ..... 930
113, 115, and 117, Portland-rd., f., r. 113*l.* 4s. ... 1,170
3, 5, and 7, St. John's-pl., f., e.r. 108*l.* ..... 870
145 and 147, Portland-rd., f., e.r. 83*l.* ..... 600
118 to 128 (even), Portland-rd., f., e.r. 244*l.* ..... 2,000
148 to 152, 160 to 186 (even), Portland-rd., f., e.r. 548*l.* 8s. ..... 3,710
181 to 241 (odd), Portland-rd., f., e.r. 968*l.* ..... 6,150
1 to 13, Prince's-mews, f., e.r. 165*l.* ..... 1,110

By JAMES HARRIS & SON.

Sparsholt, Hants.—Three cottages and enclosure, 3a. 3r. 12p., f. ..... 280
A copyhold cottage and 16p. ..... 140

May 19.—By F. ELLEN & SON (at Andover).

Whitchurch, Hants.—Larksborough, freehold residence and 47 a. 3 r. 14 p. ..... 910

By A. G. NOTLEY.

Clapton.—236, Evering-rd., u.t. 78 yrs., g.r. 11*l.* ... 710

By E. SIMPSON.

New Cross.—Billington-rd., i.g.r. 4*l.* 10s., u.t. 60 yrs. ..... 105
13, Billington-rd., u.t. 60 yrs., g.r. 10s., r. 30*l.* ... 415
Dulwich.—13, Muschamp-rd., u.t. 80 yrs., g.r. 5*l.* 10s., r. 26*l.* ..... 275
84, Oglander-rd., u.t. 79½ yrs., g.r. 6*l.* 10s., r. 30*l.* ..... 270

By WOOTTON & GREEN.

Clapham.—Abbeville-rd. North, f.g.r. 7*l.* 10s., reversion in 84 yrs. ..... 185

By DEBENHAM, TEWSON, & CO.

Lambeth. — Lambeth-walk, "The Fountain" public-house, f., r. 100*l.* ..... 3,000
Notting Hill.—29, Stanley-gardens, f. ..... £2,100

By BEAN, BURNETT, & ELDRIDGE.

Brixton.—Stockwell-rd., a profit rental of 85*l.* for 42½ yrs. ..... 445
Dulwich.—30, Lacon-rd., u.t. 82 yrs., g.r. 5*l.*, r. 31*l.* 4s. ..... 210

By RUSHWORTH & STEVENS.

Kensal Rise.—St. Margaret's-rd., f.g.r. 94*l.* 5s., reversion in 95 yrs. ..... 2,270
Earlsmead-rd., f.g.r. 62*l.* 25s., reversion in 95 yrs. ..... 1,500
Muswell Hill. — Colney Hatch-lane, "Cedar Lodge," f. ..... 1,200

By ROGERS, CHAPMAN, & THOMAS.

Kensington.—1, Pernam-rd.; also one-fourth share of a plot of land, u.t. 76 yrs., g.r. 20*l.* ..... 760
Strand.—16, Bedford-st., u.t. 47 yrs., g.r. 60*l.*, r. 270*l.* ..... 3,175

By T. N. TURNER.

Clapham.—40 to 58 (even), Wirtemberg-st., u.t. 57 yrs., g.r. 45*l.* ..... 2,155

By T. G. WHARTON.

Notting Hill.—37, Archer-st., u.t. 54¼ yrs., g.r. 8*l.*, r. 80*l.* ..... 1,100
Islington.—Upper-st., f.g.r. 46*l.* 10s., reversion in 34½ yrs. ..... 1,800

By Messrs. FOSTER.

Paddington.—Westbourne-gr., &c., i.g.r. 50*l.*, u.t. 47 yrs., g.r. nil ..... 1,000
Lancaster-st., &c., i.g.r. 176*l.* u.t. 41 yrs., g.r. 5*l.* ..... 3,320

By W. WESTON.

Paddington.—69, 71, 81, 83, 85, and 87, Clarendon-st., u.t. 57 yrs., g.r. 47*l.* ..... 1,120

By J. C. PLATT (at Hammersmith).

Hammersmith.—6, The Broadway, u.t. 74½ yrs., g.r. 50*l.*, r. 130*l.* ..... 1,240
Chiswick.—1 and 2, Dahlia-cottages, f., r. 46*l.* 16s. 505
Fulham.—14, 16, 18, 20, 26, 28, and 30, Townmead-rd., f. ..... 1,300

By HEPPER & SONS (at Leeds).

Moor Allerton, Yorks.—Stonegate-rd., enclosure of land, 4½ acres, f. ..... 666

By KILLINGWORTH & SON (at Shirbeck).

Skirbeck, Lincs.—"Vauxhall House" and two cottages, f. ..... 750
Five houses, four cottages and enclosures, 7 a. 2 r. 25 p. ..... 1,980

May 20.—By HEPPER & SONS (at Harrogate).

Harrogate.—Ofley-rd., "Harlow Hill Plantation," 6 a. 3 r. 6 p., f. ..... 820

By G. A. BICKERTON (at Richmond).

Richmond Hill.—34, Elleker-gardens, u.t. 89 yrs., g.r. 11*l.* 11s., r. 60*l.* ..... 600

By BOWDITCH & GRANT.

Addiscombe.—Clyde-rd., "The Cot" and "The Elms," f., r. 58*l.* ..... 820
Outram-rd., freehold stabling premises, r. 20*l.* ... 280

By HIGGINS & SON.

Marylebone.—115, Lisson Grove and 5, William-pl., u.t. 21 yrs., g.r. 12*l.* ..... 400
24 and 25, Little Carlisle-st., u.t. 25½ yrs., g.r. 22*l.* ..... 150

By HOBSON, RICHARDS, & CO.

Norwood.—23, Penge-rd., u.t. 70¼ yrs., g.r. 9*l.*, r. 30*l.* ..... 155

By DEBENHAM, TEWSON, & CO.

Fulham.—7 and 8, Granville-ter., u.t. 89¾ yrs., g.r. 10*l.* ..... £465
Leyton.—3 and 4, Essex Villas, u.t. 53 yrs., g.r. 24*l.* ..... 310

By H. R. FARNAN.

Stratford.—20, Fairland-rd., u.t. 93 yrs., g.r. 2*l.* 16s. ..... 300
Major-rd., f.g.r. 15*l.*, reversion in 50½ yrs. ..... 350
Barnsbury.—119 and 123, Barnsbury-rd.. u.t. 23 yrs., g.r. 9*l.*, r. 78*l.* ..... 490

By NEVE & SON.

Peckham.—167, Queen's-rd., f., r. 32*l.* ..... 350
Pomeroy-st., f.g.r. 16*l.* 10s., reversion in 65 yrs. 495

By GEORGE PRATT.

Ealing.—Florence-rd., "Walton Lodge," f., e.r. 85*l.* ..... 990
Notting Hill.—145, Elgin-cres., u.t. 43 yrs., g.r. 10*l.* r. 40*l.* ..... 240

By A. SAVILL & SON.

Epping, Essex.—"Highfield" and 2 a. 1 r. 1 p., f. 3,000
Tolleshunt D'Arcy, &c., Essex.—"Frame Farm," 207 a. 1 r. 26 p., f. ..... 1,060

By F. S. PRIEST (at Kilburn).

Willesden.—High-rd., f.g.r. 18*l.*, reversion in 97½ yrs. ..... 380
Hampstead.—91, Messina-av, u.t. 89½ yrs., g.r. 9*l.*, r. 42*l.* ..... 350

By MOORE & SONS (at Tewkesbury).

Deerhurst, Gloucestershire.—"Salter's Hill Villa" and 2. a. 3 r. 24 p., f. ..... 500
"The Folly" and 12 a. 0 r. 7 p., f. ..... 440

By VINTEN & SON (at Ramsgate).

Ramsgate, Kent.—4, Addington-st., f., r. 40*l.* ..... 630
131, and 133, King-st., f. ..... 350
Margate, Kent.—22, 24, and 26, Ethelbert-rd., f., r. 130*l.* ..... 2,780
1 and 2, Merlin-cottages, f., r. 43*l.* ..... 610
1 and 2, Zion Cottages, f. ..... 310
1 to 5, Bayley Cottages and plot of land, f. ..... 1,000
Deal, Kent.—51, 63 and 88, High-st., f., r 140*l.* ... 2,940
Margate, Kent.—3 and 4, Fairlight Glen, f. ..... 490

By WOODS & SNELLING (at Dartford).

Dartford, Kent.—21 and 23, West Hill and Stabling adjoining, f., r. 78*l.* ..... 925

May 21.—By HARDS & BRADLY (at Deptford).

Greenwich.—17, Church-st., f., e.r. 30*l.* ..... 210
23 and 25, Combedale-rd., u.t. 69 yrs., g.r. 6*l.* ... 375

By TAIT & HARRISON (at Lutterworth).

Gilmorton, Glos.—Freehold farmhouse and 37 a. 1 r. 19 p., f. ..... 2,240

By G. NICHOLS, SMITH, & ALDER (at Bristol).

Chew Magna, Somerset.—"Moreton Mill" and 8 a. 1 r. 30 p., f. ..... 800
Alveston, Glos.—Enclosure of land, 6 a. 1 r. 29 p., f. 300

By FENN & CO. (at Dedham).

Dedham, Essex.—"Westgate House" and 8 a. 1 r. 37 p., f. ..... 1,600
A plot of building land, 0 a. 1 r. 12 p., f. ..... 140

By T. RULE, OWEN, & SON (at Fishguard).

Fishguard, Pembroke. — "Windy Hall Farm," 39 a. 1 r. 14 p., f. ..... 3,600

By E. BECK & SONS (at Market Deeping).

Market Deeping, &c., Lincolnshire.—"Sheepskin Hall Farm," 89 a. 2 r. 26 p., f. ..... 3,600

By HEPPER & SONS (at Leeds).
Holbeck, Yorks.—Globe-road, three blocks of land and cottages, and buildings thereon, area 10,798 ft., f. ..... £5,399
Water-lane, a block of land, area 2,399 ft., f. ... 1,080

By TOOTELL & SONS.
Tunbridge Wells, Kent.—"The Hollands" and 97 a. 3 r. 26 p., f. ..... 12,100

By F. W. GLAZIER.
Kensington.—8, Portland-pl., c., e.r. 40*l.* ..... 505

By MONTAGU, ROBINSON & WATSON.
Brixton.—8, 9, and 10, Claribel-rd., u.t. 18 yrs., g.r. 12*l.* 9s., r. 96*l.* ..... 355
4 and 6, Akerman-rd., u.t. 17½ yrs., g.r. 13*l.* 6s., r. 68*l.* ..... 310
Islington.—11, Grace-st., u.t. 45 yrs., g.r. 2*l.*, r. 32*l.* ..... 325

By F. PERKS.
Marylebone.—25, Upper Charlton-st., u.t. 33 yrs., g.r. 24*l.*, r. 104*l.* ..... 500

By WALFORD & WILSHIN.
Camberwell.—20, Dumbleton-rd., u.t. 77 yrs., g.r. 5*l.* 10s., r. 28*l.* ..... 240

By C. P. WHITELEY.
Clapham.—54 and 56, Landor-rd., u.t. 51½ yrs., g.r. 4*l.* 16s. ..... 500
6a, and 6 to 18 (even), Willington-rd., u.t. 51½ yrs., g.r. 24*l.* ..... 1,905
Walworth.—224, Beresford-st., u.t. 54 yrs., g.r. 5*l.* 270
Bermondsey.—31, Crimscott-st., f., r. 52*l.* ..... 560
Battersea.—59 and 61, Calvert-rd., f., r. 61*l.* ..... 600

By FAREBROTHER, ELLIS, CLARK, & CO.
Berkeley-sq.—No. 36, and 9 and 10, Farm-st., u.t. 88¼ yrs., g.r. 200*l.* ..... 16,500

By C. G. & T. MOORE.
Mile End.—86, Devonshire-st., f., r. 35*l.* 2s. ..... 400
Stepney.—49, Smith-st., u.t. 17 yrs., g.r. 2*l.*, r. 30*l.* ..... 190
15, Oxford-st., u.t. 14 yrs., g.r. 2*l.* 15s., r. 27*l.* .... 115
Stoke Newington.—104, Farleigh-rd., u.t. 66 yrs., g.r. 6*l.* 6s., r. 36*l.* ..... 295
Poplar.—102, East India Dock-rd., u.t. 60 yrs., g.r. 6*l.* 15s. ..... 550
Norwood.—76, Birchanger-rd., u.t. 75½ yrs., g.r. 6*l.* 15s., r. 35*l.* ..... 290
East Ham.—30, St. Bernard's-rd., f., r. 19*l.* 10s.... 200
Whitechapel.—113, New-rd., f., e.r. 70*l.* ..... 795
123 and 125, New-rd., f., r. 150*l.* ..... 1,700

By BAXTER, PAYNE, & LEPPER.
Beckenham.—Hayne-rd., "Alfriston" and "Clanacombe," u.t. 80¼ yrs., g.r. 26*l.*, r. 150*l.* 1,500

By BRAY, DICKENS, & CO.
Hackney.—174, Amhurst-rd., u.t. 70 yrs.. g.r. 8*l.*, e.r. 60*l.* ..... 420

By THURGOOD & MARTIN.
Balham.—105, Ramsden-rd., u.t. 80 yrs., g.r. 13*l.* 140
Wanstead.—8 and 9, Laurel-pk., u.t. 95 yrs., g.r. 8*l.* 8s. ..... 220

By H. J. BLISS & SONS.
Bethnal Green.—40, 42, 48, 50, and 52, Minerva-st., u.t. 9 yrs., g.r. nil ..... 320
Leyton.—1 and 2, Mary Ann-villas, f., e.r. 68*l.* ... 1,100
Old Ford.—40 to 46 (even), Lefevre-rd., f. ..... 1,440
Hackney.—43, Mansford-st., u.t. 62 yrs., g.r. 4*l.* 10s. ..... 300

By NEWBON & CO.
St. John's Wood.—44, Grove End-rd., u.t., 20 yrs., g.r. nil, e.r. 115*l.* ..... 1,000
2, Blenheim-ter., u.t. 46 yrs., g.r. 10*l.* 10s., r. 70*l.* ..... 450
Holloway.—17, 21, and 35, Benwell-rd., u.t. 67½ yrs., g.r. 24*l.*, r. 134*l.* 12s. ..... 1,015
Finsbury Pk.—46, 48, and 50, Blackstock-rd., and Gospel Hall adjoining, u.t. 61 yrs., g.r. 18*l.* 2s., r. 183*l.*; also 44, Blackstock-rd., f., r. 27*l.* 6s. ..... 1,700
Stoke Newington.—31 and 32, Mildmay-st., f., r. 56*l.* ..... 760
Barnet.—12, St. Wilfred's-rd., f., r. 40*l.* ..... 450
Canonbury.—29, Pyrland-rd., u.t. 53 yrs., g.r. 6*l.* 6s., r. 45*l.* ..... 375

By G. B. SMALLPEICE (at Egham).
Egham, Surrey.—Hythe Fields, "Honeysuckle Cottages," f., r. 15*l.* 12s. ..... 174

By WOODS & SNELLING (at Sidcup).
Sidcup.—Manor-rd., a plot of building land, 4 a. 1 r. 20 p., f. ..... 1,675
Cres.-rd., eleven plots of building land, f. ..... 2,235

May 22.—By HOOKER & WEBB (at Croydon).
Croydon.—1, Clarence-rd., f. ..... 360
60, Croydon-grove, u.t. 54 yrs., g.r. 3*l.* 13s. 6d.... 230

By MESSRS. SPELMAN (at Norwich).
Sprowston, Norfolk.—Seven freehold cottages ..... 300

By GREEN & PEARCE (at Market Drayton).
Lockley Wood, Salop.—"Lockley Villa Farm," 44 a., f. ..... 1,200

By R. HEDLEY & SON (at Woodburn).
Woodburn, Northumberland. — The "Park Estate," f., 26 a. ..... 920

By COOPER & GOULDING.
Richmond.—10, Lion Gate-gardens, u.t. 86 yrs., g.r. 12*l.*, r. 60*l.* ..... 500

By BRIANT & SON.
Kennington.—18 and 19, Esher-st., u.t. 9½ yrs., g.r. 6*l.*, r. 72*l.* ..... 175
Wandsworth.—Wandsworth-rd., i.g.r. 24*l.*, u.t. 11½ yrs., g.r. 10*l.* 10s. ..... 100

By F. J. BISLEY & SONS.
Peckham.—72, Lausanne-rd. and l.g.r. 10*l.*, u.t. 62 yrs., g.r. 12*l.* 10s., r. 30*l.* ..... 330

By J. HIBBARD & SONS.
Camberwell.—27, 29, 31, and 33, Leipsic-rd., u.t. 10½ yrs., g.r. 11*l.* ..... 430

By FIELD & SONS.
Southwark.—33, Union-st., f., r. 100*l.* 18s. ..... 1,100
2, Three Turns Court, f., e.r. 30*l.* ..... 300
Walworth.—52, Boyson-rd., u.t. 55 yrs., g.r. 2*l.* 2s., e.r. 42*l.* ..... 350
Bermondsey.—95 and 96, Enid-st., u.t. 12 yrs., g.r. 23*l.* 18s. ..... 150

May 23.—By BLACKFORD & SON (at South Molton).
Kingsnympton, Devon.—"The West Stone Estate," 31 a. 2 r. 26 p., f. ..... 500

By W. A. BENTLEY (at Worcester).
Wichenford, Worcs.—"The Ridge End Estate," 238 a. 1 r. 1 p., f. ..... 2,500

May 26.—By P. & G. GEEN.
Acton.—2, Lorne Villas, u.t. 75¼ yrs., g.r. 7*l.* 7s., r. 27*l.* ..... 285
Kilburn.—3, Greville-rd., u.t. 48 yrs., g.r. 11*l.* 18s., r. 40*l.* ..... 315

By T. LAVINGTON (at Salisbury).
Ebbesbourne Wake, Wilts.—Freehold estate, comprising a residence and 532 a. 2 r. 10 p. ..... £4,000

May 27.—By A. BOWYER.
Enfield.—Clay Hill, "Park Farm" and 47 a. 2 r. 34 p., f. and c. ..... 6,550

By ROGERS, CHAPMAN, & THOMAS.
Kensington.—3, Dove Mews, u.t. 73 yrs., g.r. 6*l.*, e.r. 55*l.* ..... 350

By R. TIDEY & SON.
Hackney.—9, Ruthven-st., u.t. 55½ yrs., g.r. 4*l.* 10s. ..... 255
Stoke Newington.—110 and 116, High-st., f., r. 190*l.* ..... 4,120
Hoxton.—63 and 64, Napier-st., u.t. 9½ yrs., g.r. 7*l.*, r. 56*l.* ..... 190
Islington.—100 and 102, Church-rd., u.t. 41½ yrs., g.r. 10*l.*, r. 95*l.* ..... 900

By VINTEN & SON.
Ramsgate, Kent.—17, Royal-cres., f., r. 75*l.* ..... 1,150
Thanet, Kent.—Westwood-lane, enclosure of land, 17 a. 2 r. 9 p., f. ..... 1,600

By WAGSTAFF & WARMAN.
Highbury.—26, Leigh-road, u.t. 51 yrs., g.r. 8*l.* 12s., e.r. 55*l.* ..... 530

By PROTHEROE & MORRIS.
Brompton.—34, Beauchamp-pl., u.t. 27½ yrs., g.r. 17*l.* 17s., r. 80*l.* ..... 505
Leytonstone.—215, Hainault-rd., f., e.r. 40*l.* ..... 520
Normandy, Surrey.—Two enclosures of land, 5 a. 2 r. 5 p., f. ..... 200

May 28.—By WESTON & SONS.
Brixton.—21, Thornton-st., u.t. 28½ yrs., g.r. 3*l.*, e.r. 28*l.* ..... 210
7, Bythorn-st., u.t. 68 yrs., g.r. 9*l.* ..... 190

By HARDS & BRADLY.
Eltham.—66 and 68, High-st., f., r. 86*l.* ..... 1,240
New Cross.—34 and 36, Brockley-rd., u.t. 31 yrs., g.r. 6*l.*, r. 56*l.* ..... 475

By A. & H. POTTER.
Fulham.—15 and 17, Seagrave-rd., u.t. 36 yrs., g.r. 8*l.*, r. 85*l.* 4s. ..... 340

By HARMAN BROS.
Clapton.—8, Goulton-rd., f., e.r. 65*l.* ..... 870
Southgate.—Chase Side, "Sandringham Lodge," f., e.r. 65*l.* ..... 605
Stoke Newington.—75 to 85 (odd), Queen Elizabeth's-walk, u.t. 79 yrs., g.r. 40*l.*, r. 234*l.* ..... 2,585

By NEWBON & CO.
Hackney.—209, 211, and 213, Mare-st., f., r. 130*l.* 2,000
Caledonian-rd.—8 and 9, Sutterton-st., u.t. 51 yrs., g.r. 12*l.* ..... 355
Highbury.—1 to 7, North-cottages, u.t. 12½ yrs., g.r. 21*l.* ..... 515
1 to 4, Northampton-cottages; "Compton Cottage," and i.g.r. 5*l.* 5s., u.t. 6 yrs., g.r. 12*l.* 12s. ..... 160
Islington.—9, River-st., u.t. 22½ yrs., g.r. 6*l.* ..... 550
Canonbury.—21, Clephane-rd., u.t. 50 yrs., g.r. 10*l.*, e.r. 65*l.* ..... 520
Pentonville.—31, Great Percy-st., u.t. 23 yrs., g.r. 6*l.*, e.r. 65*l.* ..... 525
Walworth.—96, Westmoreland-rd., u.t. 56 yrs. g.r. 4*l.* ..... 315

By STIMSON & SONS.
Clapham.—64, Chelsham-rd., u.t. 66 yrs., g.r. 18*l.* 1,000
Canning Town.—4, 6, 8 and 10, Hoy-st., u.t. 59 yrs., g.r. 27*l.* ..... 150
Chelsea.—24 to 32 (even), Cale-st., u.t. 7½ yrs., g.r. 25*l.* ..... 225
New Cross.—258, Queen's-rd., u.t. 61 yrs., g.r. 10*l.*, e.r. 20*l.* ..... 620
Brixton.—17, 19, 21 and 23, Bartley-st., u.t. 52½ yrs., g.r. 10*l.* ..... 560
Balham.—Fontenoy-rd., 9 freehold building plots... 1,450
Dornton-rd., a freehold building plot..... 250
Culverden-rd., 10 freehold building plots ..... 1,125
Culverden-rd., a building plot, u.t. 82 yrs., g.r. 1s. ..... 190

By C. C. & T. MOORE.
Kingsland.—71, Pearson-st., u.t. 17½ yrs., g.r. 4*l.*, r. 75*l.* ..... 360
Spitalfields.—4 to 10 and 31, Great Pearl-st., and 22, Little Pearl-st., u.t. 39 yrs., g.r. 80*l.* ..... 1,160
29 to 39, Booth-st., u.t. 13 yrs., g.r. 36*l.* ..... 810
Bethnal Green.—28 to 40 (even), Chilton-st.; 45 to 55 (odd), 11, 12, and 14, Busby-st.; and 1, 2, and 3, Ryder's Buildings, u.t. 8 yrs., g.r. 120*l.* 2, 4, 6, and 8, Granby-st.; 2, 4, 6, and 8, Busby-st.; and 1 to 7, Busby-sq., u.t. 52½ yrs., g.r. 55*l.* ..... 1,010
139 and 141, Brick Lane, and 20 and 22, Baker-st., u.t. 30 yrs., g.r. 100*l.* ..... 300
133 and 135, Brick-lane, u.t. 17 yrs., g.r. 45*l.* ... 240
2, 4, and 6, Bacon-st.; 11, Swan-st., and 157, Brick-lane, u.t. 43 yrs., g.r. 52*l.* ..... 1,650
147, Brick-lane, u.t. 14½ yrs., g.r. 18*l.* ..... 280
101, 103, 105, 134 to 142 (even), Vallance-rd., and 28 and 30, Arundel-st., u.t. 22½ yrs., g.r. 50*l.* ..... 1,190
Hackney.—450, Hackney-rd., 2 to 12 (even), Minerva-street, u.t. 10 and 8½ yrs.. g.r. 106*l.* ... 275
23, 25, and 27, Treadway-st., u.t. 9½ yrs., g.r. 10*l.* ..... 150
Bethnal Green.—39, 41, 45, 47, 49, 51, and 53, Virginia-rd., and 1 to 4, Baker's-ct., c. ..... 1,960
1 to 16 and 13a, and 14a, Margaret-pl., c. ..... 2,410
St. George's East.—31 and 33, Brook-st., c. ..... 360
Forest Gate.—34, Forest-rd., f., r. 28*l.* ..... 330
Poplar.—Pennyfields, "Silver Lion," public-house, and seven cottages adjoining, f., r. 90*l.* ..... 1,540
Bethnal Green.—45 to 53 (odd), Fellbrigg-st., f. ... 1,120
Wapping.—8 and 10, Red Lion-st., f. ..... 160
Stepney.—102, 104, and 106, Heath-st., f. ..... 510
Bow.—17 to 49 (odd), Priscilla-rd., f. ..... 2,920

May 29.—By REYNOLDS & EASON.
West Smithfield.—25 and 25A, Kinghorn-st., f., r. 84*l.* ..... 1,600
20, 23, and 24, Middle-st., f., r. 291*l.* 16s. ..... 4,200
8, East Passage, f., r. 28*l.* 12s. ..... 250
14, Newbury-st., f., r. 61*l.* 2s. ..... 755
St. Luke's.—75, Gee-st., f., r. 27*l.* 6s. ..... 240

*[Contractions used in these Lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent, r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

## PRICES CURRENT OF MATERIALS.

| TIMBER. | | | TIMBER *(continued)*. | | |
|---|---|---|---|---|---|
| Greenheart, B.G. ton | 8/0/0 | 0/0/0 | Satin, Porto Rico | 0/0/7 | 0/1/6 |
| Teak, E.I. ..load | 11/0/0 | 16/0/0 | Walnut, Italian .. | 0/0/3 | 0/0/7 |
| Sequoia, U.S.ft.cu | 2/0 | 2/1 | METALS. | | |
| Ash, Canada load | 3/5/0 | 4/10/0 | Iron—Pig, in Scotland .....ton | 2/7/0½ | 2/7/1½ |
| Birch, do. ..... | 3/10/0 | 5/5/0 | Bar, Welsh, in London ..... | 5/12/6 | 5/15/0 |
| Elm, do. ..... | 4/0/0 | 5/5/0 | Do. do. at works in Wales..... | 5/2/6 | 5/5/0 |
| Fir, Dantsic, &c.. | 1/10/0 | 3/15/0 | Do. Staffordshire, in London..... | 6/0/0 | 6/10/0 |
| Oak, do..... | 2/5/0 | 3/15/0 | COPPER—British cake and ingot | 51/0/0 | 51/10/0 |
| Canada ..... | 6/0/0 | 7/10/0 | Best selected .. | 52/15/0 | 53/5/0 |
| Pine, Canada red | 0/0/0 | 0/0/0 | Sheets, strong.. | 56/0/0 | 56/10/0 |
| Do. Yellow .... | 2/15/0 | 5/0/0 | Chili bars ..... | 47/13/9 | 47/18/9 |
| Lath, Dantsic, fath | 4/10/0 | 5/10/0 | YELLOW METAL lb | 0/0/4½ | 0/0/5 |
| St. Petersburg.. | 3/0/0 | 6/10/0 | LEAD—Pig, Spanish ....ton | 11/2/5 | 11/3/9 |
| Wainscot, Riga &c., log... .... | 2/5/0 | 4/10/0 | English com. brands ..... | 11/3/9 | 11/6/3 |
| Odessa, crown.... | 2/5/0 | 4/10/0 | Sheet, English | | |
| Deals, Finland 2nd & 1st std 100 | 7/10/0 | 9/0/0 | 6 lbs. per sq. ft. and upwards .. | 12/0/0 | 0/0/0 |
| Do. 4th & 3rd .. | 7/10/0 | 8/10/0 | Pipe ..... | 12/10/0 | 0/0/0 |
| Do. Riga ..... | 7/10/0 | 8/10/0 | ZINC—English sheet.....ton | 20/0/0 | 0/0/0 |
| St. Petersburg, 1st yellow.... | 10/10/0 | 13/0/0 | Vieille Montagne ..... | 20/10/0 | 0/0/0 |
| Do. 2nd yellow | 8/10/0 | 10/10/0 | Spelter ..... | 17/17/6 | 18/0/0 |
| Do. white ..... | 8/10/0 | 10/0/0 | TIN—Straits .... | 60/1/3 | 0/0/0 |
| Swedish..... | 7/10/0 | 16/0/0 | Australian..... | 61/11/3 | 0/0/0 |
| White Sea..... | 8/10/0 | 15/10/0 | English Ingots.. | 63/10/0 | 64/0/0 |
| Canada, Pine 1st | 23/0/0 | 23/10/0 | Banca ..... | 61/10/0 | 62/0/0 |
| Do. do. 2nd .. | 16/0/0 | 17/0/0 | Billiton ..... | 61/0/0 | 61/5/0 |
| Do. do. 3rd, &c. | 8/0/0 | 10/15/0 | OILS. | | |
| Do. Spruce, 1st. | 9/0/0 | 10/10/0 | Linseed .....ton | 17/17/6 | 18/0/0 |
| Do. do. 3rd and 2nd ..... | 7/10/0 | 8/10/0 | Cocoanut, Cochin | 26/15/0 | 0/0/0 |
| New Brunswick | 7/0/0 | 8/0/0 | Do. Ceylon ..... | 22/10/0 | 22/15/0 |
| Battens, all kinds | 5/0/0 | 20/0/0 | Palm, Lagos .... | 20/10/0 | c/0/0 |
| Flooring boards, sq., 1 in. prep. 1st. ..... | 0/10/0 | 0/15/0 | Rapeseed, English pale ..... | 23/0/0 | 23/10/0 |
| Do. 2nd..... | 0/6/6 | 0/12/0 | Do. brown ..... | 21/10/0 | 22/0/0 |
| Other qualities— | 0/5/6 | c/7/0 | Cottonseed ref. .. | 16/0/0 | 16/10/0 |
| Cedar, Cuba, .ft. | ¼ | /5 | Oleine..... | 18/0/0 | 18/10/0 |
| Honduras, &c. | /4 | /5 | Lubricating U.S. | 0/6/0 | 0/7/3 |
| Mahogany, Cuba | ¼ | /8 | Do. black ..... | 0/4/9 | 0/6/6 |
| St. Domingo cargo av. | ¼ | 1/3 | TAR—Stockholm barrel | 19/6 | 1/1/0 |
| Mexican, do. do. | /4 | /5 | Archangel..... | 0/14/6 | 0/15/0 |
| Tobasco, do. do. | /5 | /7 | TURPENTINE— | | |
| Honduras, do. .. | /5 | /6½ | (American) ton | 20/7/6 | 22/10/0 |
| Box, Turkey ton | 4/0/0 | 15/0/0 | | | |
| Rose, Rio..... | 7/0/0 | 16/0/0 | | | |
| Bahia ..... | 6/0/0 | 15/0/0 | | | |
| Satin, St. Doming | 0/0/7 | 0/1/0 | | | |

## TENDERS.

**[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender: and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]**

BENGEO.—For building a cottage at Bengeo, Hertford, for Mr. Reginald A. Smith, of Goldings, Hertford. Mr. James Farley, architect, Hertford:—

| | | | |
|---|---|---|---|
| Ginn & Son | £339 | Rayment & Sons | £310 |
| R. Green | 329 | H. Norris (accepted) | 288 |

BEVERLEY (Yorks).—For the erection of Woodmansey Church. Mr. Alfred Beaumont, architect, County Hall, Beverley.

*If Faced with Stone.*

| | | | |
|---|---|---|---|
| J. W. Buttery | £2,895 | R. Potts | £2,236 |
| A. Moore | 2,632 | C. Stephenson | 2,200 |
| J. Nicholson | 2,317 | R. Pape | 2,189 |
| J. Keswick | 2,249 | J. F. Sweeting | 2,070 |
| G. Shepherdson & Sons, Ltd. | 2,246 | G. Pape, Beverley | 2,222 |

*If Faced with Brick.*

| | | | |
|---|---|---|---|
| W. Buttery | £2,810 | G. Shepherdson & Sons, Ltd. | £1,996 |
| A. Moore | 2,450 | R. Potts | 1,985 |
| J. Nicholson | 2,282 | G. Pape | 1,835 |
| C. Stephenson | 2,175 | J. F. Sweeting | 1,830 |
| R. Pape | 2,169 | J. Constable | 1,799 |
| J. Keswick | 2,154 | | |

Mr. G. Pape's tender has been accepted.

BOURNEMOUTH.—For constructing sewers from the Sanatorium to Braidley roads; in Surrey-road, from Surrey-road South to Surrey-road; and in the north end of Lansdowne-road to Winborne-road. Mr. F. W. Lacey, Borough Engineer and Surveyor:—

| | | | |
|---|---|---|---|
| Francis Reeks (informal) | £2,154 5 6 | S. Saunders | £1,699 0 0 |
| B. Cooke & Co. .... | 1,851 0 0 | W. H. Saunders & Co. (accepted).... | 1,660 0 0 |

CHELMSFORD.—For erecting a pair of villa residences. Mr. Rd. Mawhood, architect, Chelmsford:—

| | | | |
|---|---|---|---|
| E. Saltmarsh | £1,051 19 | F. Johnson (accepted) | £965 10 |
| W. Samms | 996 0 | J. Gowers | 945 0 |

[All of Chelmsford.]

CROYDON.—For the erection of three houses. Wellington-road, Croydon, for Mr. Frank Gothard. Mr. Robt. M. Chart, architect and surveyor, Croydon and Mitcham:—

| | | | |
|---|---|---|---|
| D. Waller, jun. | £1,138 | Smith & Sons..* | £875 |
| Hanscombe & Smith .... | 1,100 | | |

* Accepted.

[All of Croydon.]

DARTFORD.—For the erection of two staff blocks and laundry, and making alterations and additions to the Administrative block, and the boiler house block, at the Gore Farm Hospital, near Dartford, Kent, for the Metropolitan Asylums Board. Messrs. A. and C. Harston, Architects, 15, Leadenhall-street, E.C. Quantities by Mr. W. T. Farthing:—

| | | | |
|---|---|---|---|
| Leslie & Co., Ltd. ..... | £31,825 | McCormick & Sons..... | £26,826 |
| Gregory & Co..... | 29,748 | J. Shillitoe & Sons, Bury | |
| Johnson & Co., Ltd. .... | 29,450 | St. Edmunds* ..... | 24,999 |
| E. Lawrance & Sons.... | 26,920 | | |

* Accepted.

DOVER.—For four shops and dwellings over in Worthington's-street and Queen's-gardens, for Mr. H. W. Thorpe. Messrs. Worsfold & Hayward, architects, Dover and London. Quantities by Messrs. Dunk & Bousfield, Billiter-square-buildings, E.C.

| | | | |
|---|---|---|---|
| W. J. Adcock ..... | £3,191 | G. Lewis & Sons ..... | £2,925 |
| W. Bromley..... | 3,085 | W. & T. Denne ..... | 2,852 |
| W. G. Lewis ..... | 3,077 | Hayward & Paramour, Dover (accepted) ..... | 2,847 |
| H. Stiff ..... | 3,075 | | |
| Austen & Lewis..... | 2,970 | | |

DOWNE.—For the alterations and additions of "Queen's Head," Downe, near Orpington, Kent, for Messrs. Nalder & Collyer's Brewery Co., Limited, Croydon. Mr. Robt. M. Chart, architect and surveyor, Croydon and Mitcham:—

| | | | |
|---|---|---|---|
| Quittenton ..... | £850 | Smith & Sons ..... | £747 |
| Goulder ..... | 845 | | |

EDMONTON.—For alterations and additions at No. 180, Upper Fore-street, Edmonton, N., for Messrs. Griffiths & Co. Mr. H. Riches, architect, 3, Crooked-lane, London, E.C.:—

| | | | |
|---|---|---|---|
| W. Shurmur | £425 | H. Knight & Son | £380 |
| A. Porter | 396 | S. J. Scott | 375 |

GREAT BADDOW (Essex).—For erecting a pair of cottages and stable. Mr. Mawhood, architect, Chelmsford:—

| | | | |
|---|---|---|---|
| E. Saltmarsh | £700 | W. Fincham, Chelmsford* | £634 |
| W. Samms | 660 | | |
| Jno. Rayner | 635 10 | | |

* Accepted.

GREAT BADDOW (Essex).—Accepted for erecting four cottages. Mr. Mawhood, architect, Chelmsford:—

Eaton & Ely, Chelmsford ..... £628 10

LEAMINGTON.—For additions to the brewery, for Messrs. Lucas, Blackwell & Arkwright, under the superintendence of Messrs. Scamell & Colyer, 18, Great George-street, Westminster, S.W. Quantities by Messrs. R. L. Curtis & Sons, 119, London Wall:—

*No. 1 Contract—Building.*

G. F. Smith & Sons, Leamington* ..... £4,499

*No. 2 Contract—Ironwork.*

R. Moreland & Sons ..... £1,828
Thornewill & Warham, Burton-on-Trent* ..... 1,753

*No. 3 Contract—Machinery.*

Thornewill & Warham ..... £4,564
G. R. Wilson & Co., Limited, Frome* ..... 3,657

*No. 4 Contract—Coppers.*

G. R. Wilson & Co., Limited, Frome* ..... £882

*No. 5 Contract—Pipes, &c.*

G. R. Wilson & Co., Limited, Frome* ..... £1,837

*No. 6 Contract—Refrigerators.*

Lawrence & Co., Limited, London* ..... £371

* Accepted.

LONDON.—Accepted for alterations and reinstating damage caused by fire at 49, Bermondsey New-road, for Mr. P. Francis. Messrs. J. Lewis & Co., fire surveyors:—

Diamond & Porter ..... £225 12 6

LONDON.—For alterations to premises, No. 12, Chapel-street, Somers Town, for Mr. R. Johnston. Mr. Albert E. Pridmore, architect:—

| | | | |
|---|---|---|---|
| Beer & Gash | £208 | Wiltshire | £156 |
| Eastwell | 206 | London & Co. | 156 |
| Mason & Co. | 158 | H. Bradford (accepted) | 144 |

LONDON.—For additions, alterations, &c., to house and stables, No. 2, Devonshire-terrace, Portland-place, W. Mr. George Hornblower, architect, 22, Fitzroy-street, W.:—

| | | | |
|---|---|---|---|
| J. Conway | £3,400 | T. Stevens | £2,983 |
| Scrivener & Co. | 3,230 | Head & Co. | 2,980 |
| N. Lidstone | 3,228 | Gould & Brand | 2,795 |
| A. A. Webber | 3,200 | W. Tout, Hendon* | 2,750 |
| D. Prosser | 3,059 | | |

*Dinner and Coal Lift*

J. Conway* ..... £51 10

* Accepted.

LONDON.—For fitting up hot water supply and warming apparatus in I and J blocks and workshops at the St. Pancras Workhouse, for the Guardians of St. Pancras. Messrs. A. & C. Harston, architects, 15, Leadenhall-street, E.C.:—

| | | | |
|---|---|---|---|
| Mallett & Co. | £1,156 10 | Wenham & Waters, Lim. | 785 0 |
| Perkins & Sons, Lim. | 1,150 0 | J. C. & J. S. Ellis, Lim. | 779 0 |
| Matthews & Yates, Lim. | 985 10 | Clements, Jeakes, & Co. | 725 0 |
| Vaughan & Brown | 978 0 | J. F. Clarke & Co. | 716 0 |
| McCormick & Sons | 947 0 | Christie & Co. | 705 0 |
| Fraser & Fraser, Lim. | 895 0 | Benham & Sons, Lim. | 650 15 |
| J. & F. May | 890 0 | J. Fraser & Son | 595 0 |
| G. & E. Bradley | 861 0 | Tabor & Hinchcliffe, Cambridge* | 532 0 |
| Strode & Co. | 705 0 | | |

* Accepted.

LONDON.—For alterations at the "Prince Regent," Globe-road Mile-end, for Mr. H. Whiter. Mr. Edwd. Brown, architect, Commercial-street, Bishopsgate:—

Bristow & Eatwell ..... £179 | Coote, Davis & Co.* ..... 146

* Accepted.

LONDON.—Accepted for repairs, &c., to houses on the Haberdashers Estate (Fanshaw and Aske-streets), Hoxton, for Mr. S. Arno. Mr. A. J. Martin, architect and surveyor, 386, Old-street, E.C.:—

John Weibking & Sons ..... £2,630

LONDON.—Accepted for reinstating premises, 2 and 4, Centre-street, Hackney, for Mr. E. J. Walter:—

John Weibking & Sons ..... £210

LONDON.—Accepted for reinstating premises at 11, Boot-street Hoxton, for Mr. J. West:—

John Weibking & Sons ..... £200

LONDON.—For alterations and repairs to 67, Leather-lane, E.C., for Mr. Birkin. Mr. Joseph G. Needham, architect, 11, Powerscroft-road, Clapton, N.E.:—

E. Lancaster (accepted) ..... £340

LONDON.—For pulling down and rebuilding stables, No. 6, Buckhurst-street, Bethnal Green, for Mr. H. S. Bocking. Mr. Joseph G. Needham, architect, 11, Powerscroft-road, Clapton, N.E.:—

| | | | |
|---|---|---|---|
| W. Well | £1,030 | J. F. Holiday | £785 |
| Young & Son | 945 | H. Hood | 765 |
| Hawkins & Oldham | 758 | E. Lancaster* | 715 |

* Accepted.

LUTON.—For the erection of villa residence, Hitchin-road, Luton, for Mr. E. Shepherd. Mr. W. J. Pearson, architect, Cheapside-chambers:—

| | | | |
|---|---|---|---|
| Taylor | £705 10 | Kingham | £630 0 |
| Pryer | 666 0 | Saunders (accepted) | 600 0 |

[All of Luton.]

LUTON.—For the erection of villa residence, New Bedford-road, for Mr. A. Godfrey. Mr. W. J. Pearson, architect, Cheapside-chambers:—

| | | | |
|---|---|---|---|
| Dunham | £873 0 | Pryer | £775 0 |
| Turner | 849 0 | Smart | 770 0 |
| Parkins | 842 0 | Buckingham | 768 0 |
| Saunders | 819 10 | | |

[All of Luton.]

LUTON.—Accepted for the erection of three residences, Dunstable-road, for Mr. J. W. Jones. Mr. W. J. Pearson, architect, Cheapside-chambers:—

Attwood ..... £1,050.

LUTON.—For the erection of four villa residences, in London-road, for Mr. Thos. Jones. Mr. W. J. Pearson, architect, Cheapside-chambers:—

| | | | |
|---|---|---|---|
| Attwood | £2,131 0 0 | Kingham | £1,988 10 0 |
| Pryer | 2,125 0 0 | Smart | 1,980 0 0 |
| Turner | 2,109 0 0 | Parkins | 1,945 10 0 |
| Dunham | 2,030 0 0 | Buckingham | 1,810 0 0 |
| Saunders | 2,013 13 3 | | |

[All of Luton.]

MITCHAM.—For the erection of a varnish factory and warehouse, Church-road, Mitcham, for Messrs. Norman & Smee, 7, New Union-street, Finsbury, E.C. Mr. Robt. M. Chart, architect and surveyor, Croydon and Mitcham:—

| | | | |
|---|---|---|---|
| J. D. Drewett | £690 | E. J. Burnand, Wallington* | £630 |
| J. Burges | 650 | | |

* Accepted.

NEATH.—For the erection of stores and offices at Neath (Wales), for Mr. H. Stone. Mr. T. P. Martin, architect. 1, Northampton-chambers, Swansea. Quantities by architect:—

| | | | |
|---|---|---|---|
| H. David & Sons | £4,998 15 0 | H. Billings | £2,675 0 0 |
| T. Hughes | 3,978 18 8 | Horton & Co. | 2,535 16 0 |
| W. Lissaman, jun. | 3,600 0 0 | J. Allan | 2,520 0 0 |
| T. Waters | 3,453 4 10 | Bennett Bros. | 2,365 0 0 |
| A. George | 2,775 11 0 | David Jenkins, 89, Lower Oxford-street, Swansea* | 2,360 0 0 |
| E. Thomas | 2,694 0 0 | | |
| D. C. Jones & Co | 2,679 0 0 | | |

*Accepted.

NELSON (Lancs.).—Accepted for the erection of Baptist Sunday School, in Every-street, Nelson. Mr. H. Whitaker, architect, 79, Scotland-road, Nelson:—

| | |
|---|---|
| *Excavating, Draining, Masonry and Brickwork.*—A & R. Parker, Burnley | £2,700 0 |
| *Joinery.*—Dean & Sons, Plumbe-street, Burnley | 1,098 0 |
| *Slating.*—Wm. Stanworth, Bank Top, Burnley | 154 0 |
| *Plastering.*—E. Butler, Barrowford | 128 0 |
| *Plumbing.*—Earnshaw & Co., Nelson | 126 0 |
| *Painting.*—J. Hargreaves | 77 10 |
| | £4,283 10 |

RAYLEIGH.—For house and stables at Rayleigh, Essex, for Mr. John Taylor. Messrs. J. Thompson & Greenhalgh, architects:—

| | | | |
|---|---|---|---|
| Davis & Leaney | £1,610 | Symes | £1,557 |
| Turtle & Appleton | 1,590 | West, Chelmsford* | 1,475 |

* Recommended.

SHEFFIELD.—For the erection of seven houses, Grimesthorpe, for Mr. R. Dawson, Sheffield. Mr. Edmund Winder, junior, architect, Wharf-street, Sheffield:—

| | | | |
|---|---|---|---|
| Saul & Sons | £1,698 0 0 | John Arnold | £1,475 |
| A. E. Canham | 1,685 0 0 | W. Sanderson | 1,400 |
| Henry Sykes | 1,642 1 8 | Henry Proud | 1,357 |
| J. Gardner | 1,520 0 0 | Joel Gowe, 47, Brinsworth-street, Sheffield* | 1,299 |
| W. Aspland | 1,599 0 0 | | |
| J. Masson | 1,529 0 0 | | |

* Accepted.

SOUTHEND.—For erecting a villa residence and stables, Southend, for Mr. Henry Brown. Messrs. J. Thompson & Greenhalgh, architects:—

| | | | |
|---|---|---|---|
| Sawyer | £5,555 | Davis & Leaney | £4,542 |
| Symes | 5,069 | Dupont, Colchester and Southend* | 4,538 |
| Baker & Wiseman | 4,921 | | |
| Turtle & Appleton | 4,850 | Brown | 4,495 |
| West | 4,697 | | |

* Accepted.

WALTHAMSTOW.—For alterations and additions to the Lorne Arms public-house, Queen's-road, Walthamstow, E., for Mr. J. Sawyer. Mr. Fred. A. Ashton, architect, 3, Crooked-lane, E.C.:—

| | | | |
|---|---|---|---|
| Heaile & Farrow | £1,896 | J. & H. Cocks | £1,864 |
| J. Bentley | 1,890 | W. Sburnur | 1,845 |
| W. Watson | 1,879 | S. Goodall | 1,645 |

## TO CORRESPONDENTS.

H.H.B.S.—(Your letter is quite beside the subject of Mr. Brewer's question).

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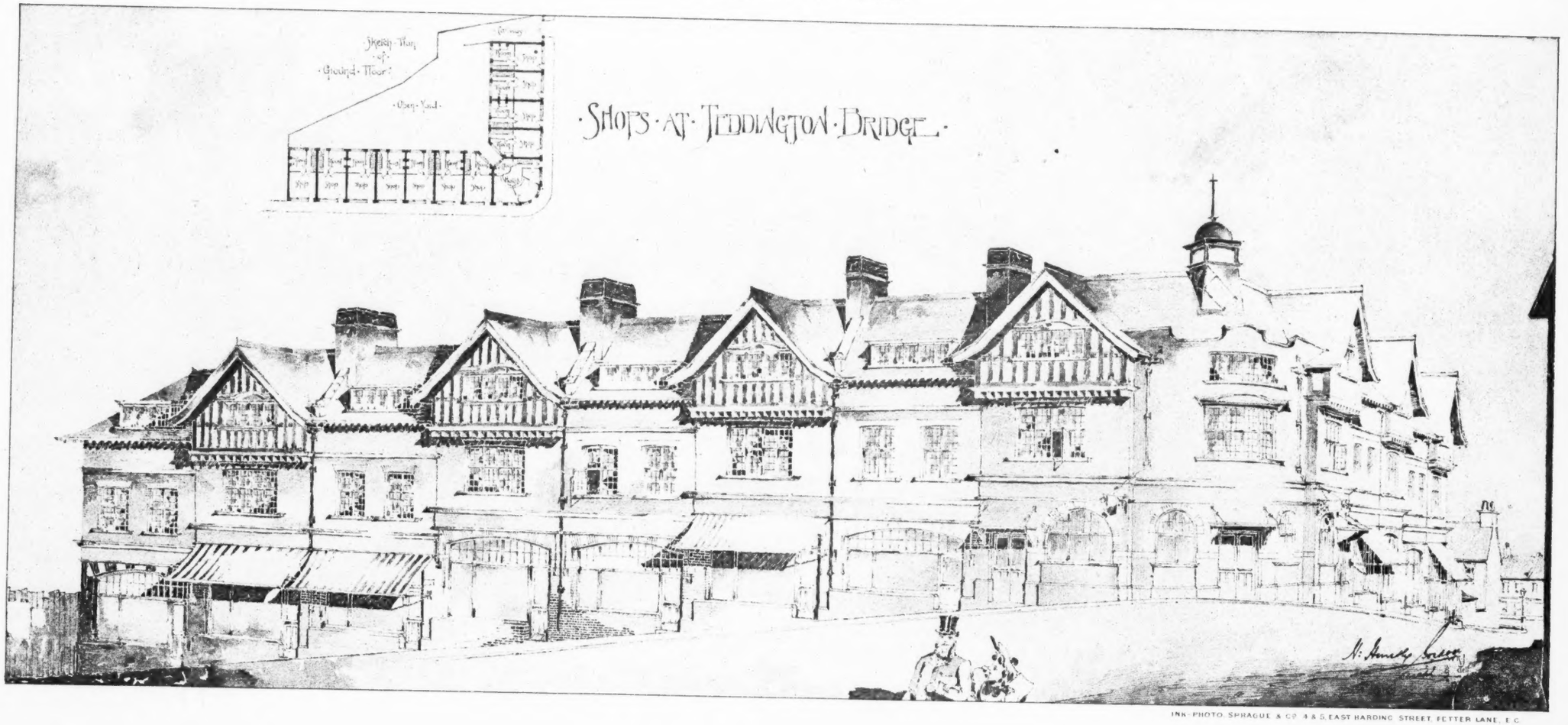


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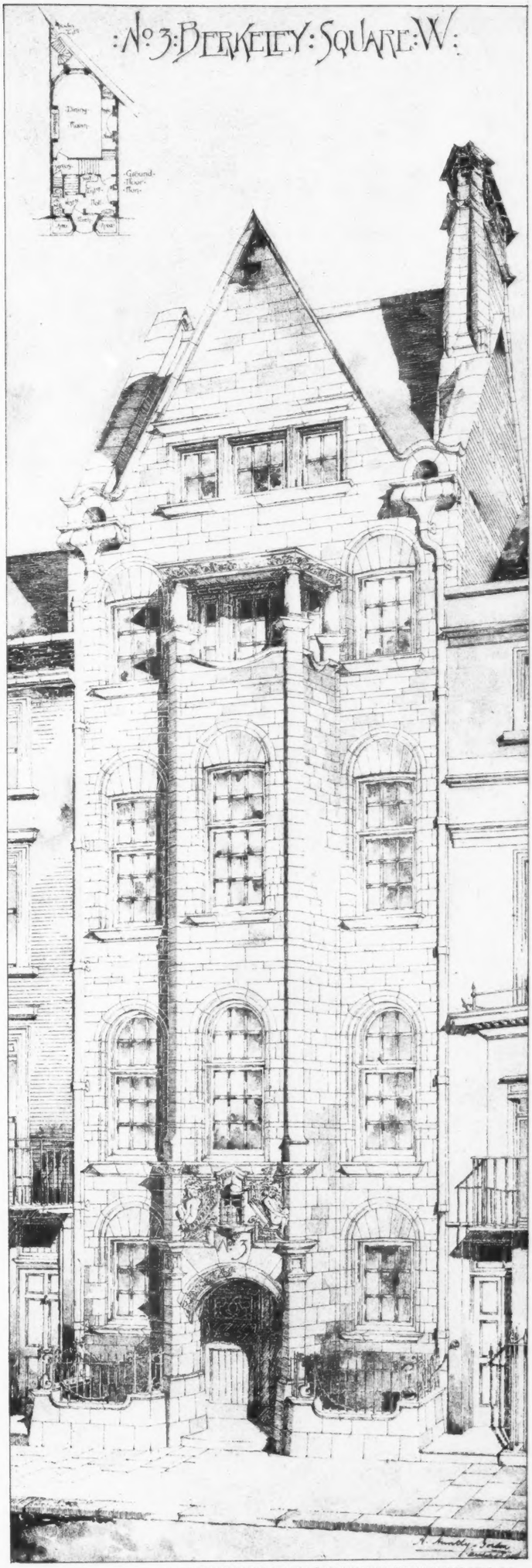
# :No 3: BERKELEY: SQUARE: W:

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ENTRANCE, No. 46, GREAT TITCHFIELD STREET, LONDON.—Mr. Beresford Pite, A.R.I.B.A., Architect.

CITY IMPROVEMENT, YORK: NEW BUILDINGS, DIN

NGS, DUNCOMBE PLACE.—Mr. Edmund Kirby, F.R.I.B.A., Architect.

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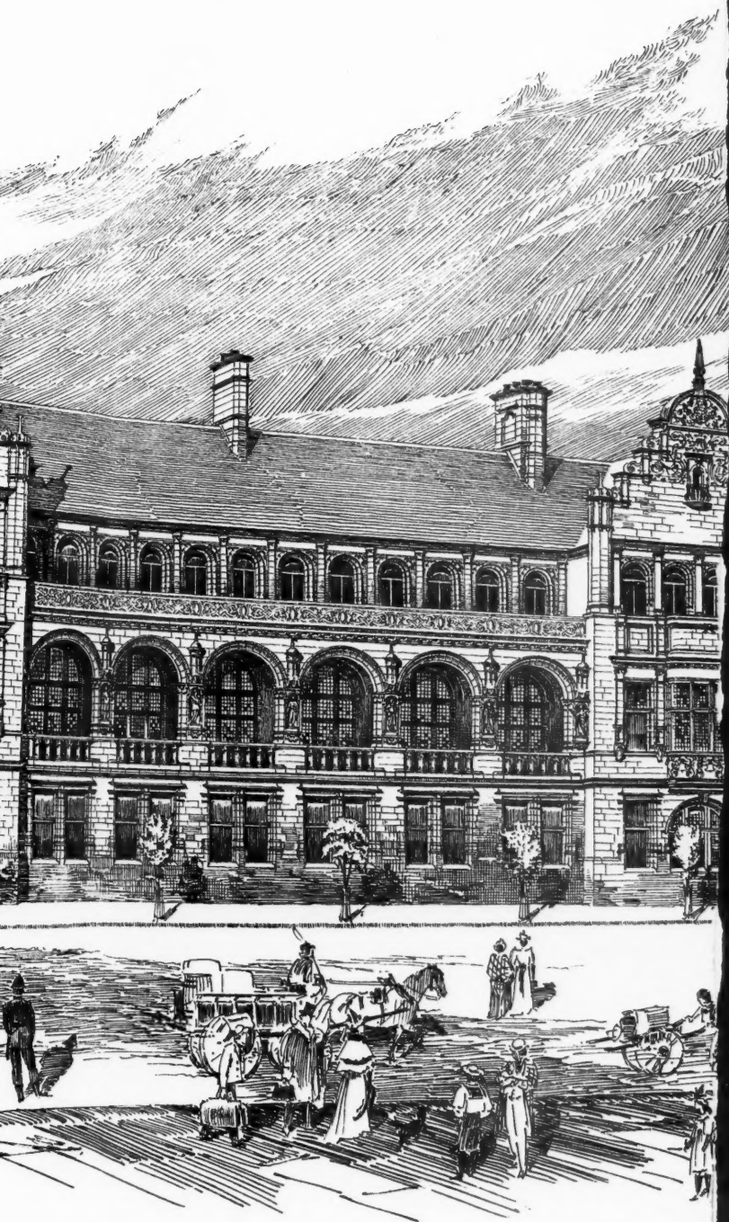
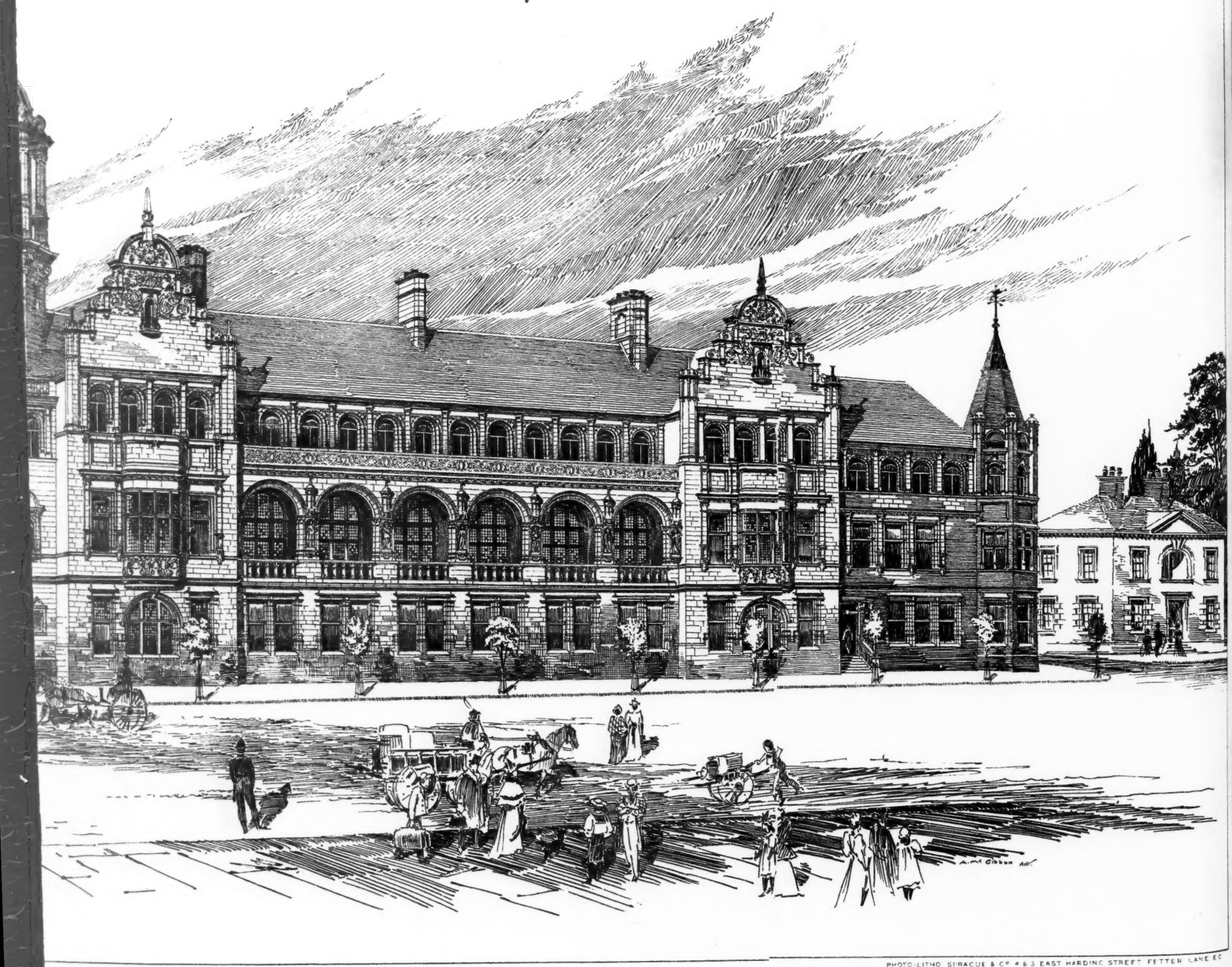
YORK: NEW BUILDINGS, DUNCOMBE PLACE.—Mr. Edmund Kirby, F.R.I.B.A., Architect.

# THE WEST RIDING COUNTY COUNCIL

UNCIL OFFICES J.S. GIBSON S.B.



# INTY COUNCIL OFFICES J.S. GIBSON S.B. RUSSELL: ARCHITECTS



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